# PRELIMINARY SITE PLAN REVIEW

# CIRCLE K - NTI - NC 55 & E JACKSON BLVD - ERWIN, NC

## 92 E. JACKSON BLVD, ERWIN, NORTH CAROLINA 28339
## HARNETT COUNTY


**OWNER:**

JACKSON FAMILY
ENTERPRISES, LLC
111 DENIM DR
ERWIN, NC 28339

**ARCHITECT:**

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**CIVIL ENGINEER:**

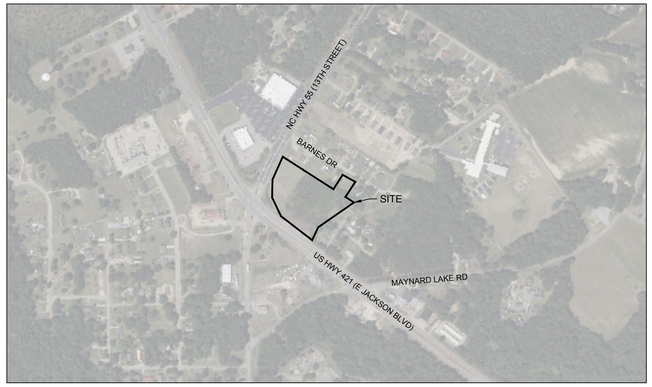
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| SITE PLAN SUMMARY | |
|---|---|
| PROJECT: | CIRCLE K - NTI - NC 55 & E JACKSON BLVD - ERWIN, NC |
| OWNERS: | JACKSON FAMILY ENTERPRISES, LLC |
| PROJECT ADDRESS: | 92 E. JACKSON BLVD, ERWIN, NC 28339 |
| PIN #: | 06059711010040 |
| DEED: | DB 2022 PG 473 |
| ZONING: | B2 - HIGHWAY BUSINESS |
| EXISTING USE: | VACANT |
| PROPOSED USE: | CONVENIENCE STORE W/GAS SALES |
| FLOOD ZONE: | NOT LOCATED IN FLOOD HAZARDS AREA PER FEMA MAP #3720059700J (EFFECTIVE 10/03/2006) |
| TOTAL EXISTING TRACT AREA: | 4.161 AC |
| PROPOSED TRACT AREA: | 4.161 AC |
| DISTURBED AREA: | 4.5 AC |
| EXISTING IMPERVIOUS SURFACE AREA: | 0.00 AC |
| PROPOSED ON-SITE IMPERVIOUS SURFACE AREA: | 1.601 AC (38.5%) (INCLUDES 0.100 AC FUTURE IMPERVIOUS) |
| TYPE OF BUILDING CONSTRUCTION: | V-B (NON-SPRINKLERED) |
| TYPE OF CANOPY CONSTRUCTION: | II-B |
| VEHICLE PARKING SUMMARY: REQUIRED | 1 SPACE PER 200 SQUARE FEET OF GROSS FLOOR AREA<br>+ I SPACE FORE EACH COMPANY VEHICLE<br>3,956 SF / 200 SF = 20 SPACES REQUIRED |
| VEHICLE PARKING SUMMARY: PROVIDED | 20 SPACES ON-SITE, ADA: 1 REQ'D; 1 PROV'D W/ 1 VAN ACCESSIBLE<br>1 LOADING SPACE |




VICINITY MAP
SCALE 1" = 500'

**GENERAL NOTE**

ALL CONTRACTORS SHALL VISIT THE PROJECT TO FAMILIARIZE THEMSELVES WITH SITE CONDITIONS PRIOR TO BIDDING OR CONSTRUCTION. BY SUBMITTING A BID, THE CONTRACTOR AND HIS SUBCONTRACTORS ARE CONFIRMING THAT THEY HAVE VISITED THE SITE AND HAVE INCLUDED IN THEIR BID ANY ADDITIONAL ITEMS OF CONSTRUCTION THAT MAY BE REQUIRED DUE TO EXISTING SITE CONDITIONS.

**HARNETT REGIONAL WATER STANDARD NOTES:**

1. WATERLINE CONSTRUCTION AND TIE-IN WILL NEED TO BE COORDINATED AND INSPECTED BY HRW CONSTRUCTION INSPECTOR CHAD EVERETT.
2. APPROVAL OF THE PLAT/PLAN DOES NOT GUARANTEE WATER CAPACITY. CURRENT/FUTURE CAPACITY MAY NOT BE AVAILABLE. THIS DEVELOPMENT MAY REQUIRE ADDITIONAL IMPROVEMENTS TO THE EXISTING WATER SYSTEM TO MEET FUTURE WATER DEMANDS PRIOR TO A PRELIMINARY PLAT, CONSTRUCTION PLAN AND/OR FINAL PLAT APPROVAL.

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ISSUED FOR CONSTRUCTION

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ERWIN, HARNETT COUNTY, NCDEQ, AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

KNOW WHAT'S BELOW.
CALL 811 BEFORE YOU DIG.

S:\32\37630-232-NC55&EJacksonBlvd_Erwin\NCDWG\Sheet\CD\37630.232-COVR.dwg | Plotted on 6/9/2026 5:24 PM | by John Hinsley

NORTH CAROLINA PROFESSIONAL SEAL 048231 ENGINEER JACOB C. DOOLEY
06/09/2026


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YOUR VISION ACHIEVED THROUGH OURS.

| DATE | REVISION DESCRIPTION |
|---|---|
| 03/02/2026 | NCDOT ROADWAY EXHIBIT SUBMITTAL #1 |
| 03/20/2026 | NCDEQ, NCDOT, TOWN OF ERWIN, HRW RESUBMITTALS |
| 04/29/2026 | HRW RESUBMITTAL |
| 05/20/2026 | NCDOT SUBMITTAL |
| 06/09/2026 | HRW SUBMITTAL #4 |

DATE: 12/17/2025
DRAWN BY: 332
DESIGNED BY: J. DOOLEY
CHECKED BY: J. DOOLEY
SCALE: AS SHOWN

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC
TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA
COVER SHEET

JOB NO. 37630.232
SHEET NO. C0.0


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**HRW REQUIRED UTILITY NOTES**

WATER

A. THE FIRE MARSHAL'S OFFICE SHALL APPROVE ALL HYDRANT TYPES AND LOCATIONS IN NEW SUBDIVISIONS. HOWEVER, HARNETT REGIONAL WATER PREFERS THE CONTRACTORS TO INSTALL ONE OF THE FOLLOWING FIRE HYDRANTS:
   1. MUELLER - SUPER CENTURION 250 A-423 MODEL WITH A 5¼" MAIN VALVE OPENING THREE WAY (TWO HOSE NOZZLES AND ONE PUMPER NOZZLE);
   2. AMERICAN DARLING - MARK B-84-B MODEL WITH A 5¼" MAIN VALVE OPENING THREE WAY (TWO HOSE NOZZLES AND ONE PUMPER NOZZLE);
   3. WATEROUS - PACER B-67-250 MODEL WITH A 5¼" MAIN VALVE OPENING THREE WAY (TWO HOSE NOZZLES AND ONE PUMPER NOZZLE) OR APPROVED EQUAL FOR STANDARDIZATION.

*ALL FIRE HYDRANTS LISTED ABOVE MUST HAVE "AMERICAN NATIONAL FIRE HOSE CONNECTION SCREW THREADS" NST/NH HOSE THREADS.

B. FIRE HYDRANTS ARE INSTALLED AT CERTAIN ELEVATIONS. ANY GRADE CHANGE NEAR ANY FIRE HYDRANT, WHICH IMPEDES ITS OPERATION, SHALL BECOME THE RESPONSIBILITY OF THE UTILITY CONTRACTOR FOR CORRECTION. CORRECTIONS WILL BE MONITORED BY THE HRW UTILITY CONSTRUCTION INSPECTOR AND THE HARNETT COUNTY FIRE MARSHAL.

C. THE PROFESSIONAL ENGINEER (PE) SHALL OBTAIN AND PROVIDE THE NCDEQ "AUTHORIZATION TO CONSTRUCT" PERMIT TO THE UTILITY CONTRACTOR BEFORE THE CONSTRUCTION OF THE WATER LINE SHALL BEGIN. THE UTILITY CONTRACTOR MUST POST A COPY OF THE NCDEQ "AUTHORIZATION TO CONSTRUCT" PERMIT ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NCDEQ) ON SITE PRIOR TO THE START OF CONSTRUCTION. THE PERMIT MUST BE MAINTAINED ON SITE THROUGHOUT THE ENTIRE CONSTRUCTION PROCESS OF THE PROPOSED WATER LINES THAT WILL SERVE THIS PROJECT.

D. THE UTILITY CONTRACTOR SHALL NOTIFY HARNETT REGIONAL WATER (HRW) AND THE PROFESSIONAL ENGINEER (PE) AT LEAST TWO DAYS PRIOR TO CONSTRUCTION COMMENCING. THE UTILITY CONTRACTOR MUST SCHEDULE A PRE-CONSTRUCTION CONFERENCE WITH MR. CHAD EVERETTE, HRW UTILITY CONSTRUCTION INSPECTOR AT LEAST TWO (2) DAYS BEFORE CONSTRUCTION WILL BEGIN AND THE UTILITY CONTRACTOR MUST COORDINATE WITH HRW FOR REGULAR INSPECTION VISITATIONS AND ACCEPTANCE OF THE WATER SYSTEM(S). CONSTRUCTION WORK SHALL BE PERFORMED ONLY DURING THE NORMAL WORKING HOURS OF HRW WHICH IS 8:00 AM – 5:00 PM MONDAY THROUGH FRIDAY. HOLIDAY AND WEEKEND WORK IS NOT PERMITTED BY HRW.

E. THE PROFESSIONAL ENGINEER (PE) SHALL PROVIDE HRW AND THE UTILITY CONTRACTOR WITH A SET OF NCDEQ APPROVED PLANS MARKED "RELEASED FOR CONSTRUCTION" AT LEAST TWO DAYS PRIOR TO CONSTRUCTION COMMENCING. THE REGISTERED LAND SURVEYOR (RLS) SHOULD STAKE OUT ALL LOT CORNERS AND THE GRADE STAKES FOR THE PROPOSED FINISH GRADE FOR EACH STREET BEFORE THE UTILITY CONTRACTOR BEGINS CONSTRUCTION OF THE WATER LINE(S). THE GRADE STAKES SHOULD BE SET WITH A CONSISTENT OFFSET FROM THE STREET CENTERLINE SO AS NOT TO INTERFERE WITH THE STREET GRADING AND UTILITY CONSTRUCTION.

F. THE UTILITY CONTRACTOR SHALL PROVIDE THE HRW UTILITY CONSTRUCTION INSPECTOR WITH MATERIAL SUBMITTALS AND SHOP DRAWINGS FOR ALL PROJECT MATERIALS PRIOR TO THE CONSTRUCTION OF ANY WATER LINE EXTENSION(S), AND ASSOCIATED WATER SERVICES IN HARNETT COUNTY. THE MATERIALS TO BE USED ON THE PROJECT MUST MEET THE ESTABLISHED SPECIFICATIONS OF HRW AND BE APPROVED BY THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION. ALL SUBSTANDARD MATERIALS OR MATERIALS NOT APPROVED FOR USE IN HARNETT COUNTY FOUND ON THE PROJECT SITE MUST BE REMOVED IMMEDIATELY WHEN NOTIFIED BY THE HRW UTILITY CONSTRUCTION INSPECTOR.

G. THE WATER MAIN(S), FIRE HYDRANTS, SERVICE LINES, METER SETTERS AND ALL ASSOCIATED APPURTENANCES SHALL BE CONSTRUCTED IN STRICT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE HARNETT REGIONAL WATER (HRW). THE UTILITY CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE THE NEWLY INSTALLED WATER MAIN(S), WATER SERVICE LINES AND ALL ASSOCIATED METER SETTERS AND METER BOXES FOROTHER UTILITY COMPANIES AND THEIR CONTRACTORS UNTIL THE NEW WATER MAIN(S) HAVE BEEN APPROVED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF ENVIRONMENTAL HEALTH, PUBLIC WATER SUPPLY SECTION (NCDEQ, DEH, PWS) AND ACCEPTED BY HRW.

H. PRIOR TO ACCEPTANCE, ALL SERVICES WILL BE INSPECTED TO ENSURE THAT THEY ARE INSTALLED AT THE PROPER DEPTH. ALL METER BOXES MUST BE FLUSH WITH THE GROUND LEVEL AT FINISH GRADE AND THE METER SETTERS MUST BE A MINIMUM OF 8" BELOW THE METER BOX LID. METER SETTERS SHALL BE CENTERED IN THE METER BOX AND SUPPORTED BY BRICK, BLOCK OR STONE.

I. THE UTILITY CONTRACTOR SHALL PROVIDE THE PROFESSIONAL ENGINEER AND HRW UTILITY CONSTRUCTION INSPECTOR WITH A SET OF RED LINE DRAWINGS IDENTIFYING THE COMPLETE WATER SYSTEM INSTALLED FOR EACH PROJECT. THE RED LINE DRAWINGS SHOULD IDENTIFY THE MATERIALS, PIPE SIZES AND APPROXIMATE DEPTHS OF THE WATER LINES AS WELL AS THE GATE VALVES, FIRE HYDRANTS, METER SETTERS, BLOW OFF ASSEMBLIES AND ALL ASSOCIATED APPURTENANCES FOR ALL WATER LINE(S) CONSTRUCTED IN HARNETT COUNTY. THE RED LINE DRAWINGS SHOULD CLEARLY IDENTIFY ANY DEVIATIONS FROM THE NCDEQ APPROVED PLANS. ALL CHANGE ORDERS MUST BE APPROVED BY HRW AND THE PROFESSIONAL ENGINEER (PE) IN WRITING AND PROPERLY DOCUMENTED IN THE RED LINE FIELD DRAWINGS.

J. POTABLE WATER MAINS CROSSING OTHER UTILITIES AND NON-POTABLE WATER LINES (SANITARY SEWER, STORM SEWER, RCP, ETC.) SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF TWENTY-FOUR (24") INCHES BETWEEN THE POTABLE WATER MAIN AND ALL OTHER UTILITIES. NCDOT REQUIRES THE NEW WATER MAINS TO BE INSTALLED UNDER THE STORM WATER LINES. THE POTABLE WATER MAIN SHALL BE INSTALLED WITH TWENTY-FOUR (24") INCHES OF VERTICAL SEPARATION AND WITH DUCTILE IRON PIPE WHEN DESIGNED TO BE PLACED UNDER A NONPOTABLE WATER LINE SUCH AS SANITARY SEWER OR STORM SEWER LINES. IF THESE SEPARATIONS CANNOT BE MAINTAINED THEN THE WATER MAIN SHALL BE INSTALLED WITH DUCTILE IRON PIPE. BOTH THE POTABLE WATER MAIN AND THE NON-POTABLE WATER LINE MUST BE CAST IRON OR DUCTILE IRON PIPE (DIP) IF THE STATE MINIMUM SEPARATIONS CANNOT BE MAINTAINED. THE DUCTILE IRON PIPE MUST BE LAID SO THE MECHANICAL JOINTS ARE AT LEAST (10') FEET FROM THE POINT WHERE THE POTABLE WATER MAIN CROSSES THE NON-POTABLE WATER LINE.

K. POTABLE WATER MAINS INSTALLED PARALLEL TO NON-POTABLE WATER LINES (SANITARY SEWER, STORM SEWER, RCP, ETC.) SHALL BE LAID TO PROVIDE A MINIMUM HORIZONTAL DISTANCE OF TEN (10') FEET BETWEEN THE POTABLE WATER MAIN AND SANITARY SEWER MAINS, SEWER LATERALS AND SERVICES. THE HORIZONTAL SEPARATION BETWEEN THE POTABLE WATER MAIN AND ANY OTHER UTILITY OR STORM SEWER SHALL NOT BE LESS THAN FIVE (5') FEET. THE POTABLE WATER MAIN MUST BE DUCTILE IRON PIPE IF THIS HORIZONTAL SEPARATION OF TEN (10') FEET CANNOT BE MAINTAINED. THE DUCTILE IRON PIPE SHALL EXTEND AT LEAST TEN (10') FEET BEYOND THE POINT WHERE THE MINIMUM REQUIRED HORIZONTAL SEPARATION OF TEN (10') FEET CAN BE RE-ESTABLISHED.

L. METER SETTERS SHALL BE INSTALLED IN PAIRS ON EVERY OTHER LOT LINE WHERE POSSIBLE TO LEAVE ADEQUATE SPACE FOR OTHER UTILITIES TO BE INSTALLED AT A LATER TIME. THE METER SETTERS SHALL BE INSTALLED AT LEAST ONE (1') FOOT INSIDE THE RIGHT-OF-WAY AND AT LEAST THREE (3') TO FIVE (5') FEET FROM THE PROPERTY LINE BETWEEN THE LOTS.

M. HRW REQUIRES THAT METER BOXES FOR ¾" SERVICES SHALL BE 12" WIDE X 17" LONG ABS PLASTIC BOXES AT LEAST 18" IN HEIGHT WITH CAST IRON LIDS/COVERS. METER BOXES FOR 1" SERVICES SHALL BE 17" WIDE X 21" LONG ABS PLASTIC BOXES AT LEAST 18" IN HEIGHT WITH PLASTIC LIDS AND CAST IRON FLIP COVERS IN THE CENTER OF THE LIDS. METER BOXES FOR 2" SERVICES SHALL BE 20" WIDE X 32" LONG ABS PLASTIC BOXES AT LEAST 20" IN HEIGHT WITH PLASTIC LIDS AND CAST IRON FLIP COVERS IN THE CENTER OF THE LIDS.

N. MASTER METERS MUST BE INSTALLED IN CONCRETE VAULTS SIZED FOR THE METER ASSEMBLY AND ASSOCIATED APPURTENANCES SO AS TO PROVIDE AT LEAST EIGHTEEN (18") INCHES OF CLEARANCE BETWEEN THE BOTTOM OF THE CONCRETE VAULT AND THE BOTTOM OF THE METER SETTER. THE MASTER METER MUST BE PROVIDED TEST PORTS IF THE METER IS NOT EQUIPPED WITH TEST PORTS FROM THE MANUFACTURER IN ACCORDANCE WITH THE HRW ESTABLISHED STANDARD SPECIFICATIONS AND DETAILS. DUCTILE IRON PIPE MUST BE USED FOR THE MASTER METER VAULT PIPING AND VALVE VAULT PIPING. THE UTILITY CONTRACTOR MUST PROVIDE SHOP DRAWINGS FOR THE METER VAULTS TO HRW PRIOR TO ORDERING THE CONCRETE VAULTS.

O. THE UTILITY CONTRACTOR WILL INSTALL POLYETHYLENE SDR-9 WATER SERVICE LINES THAT CROSS UNDER THE PAVEMENT INSIDE A SCHEDULE 40 PVC CONDUIT TO ALLOW FOR REMOVAL AND REPLACEMENT IN THE FUTURE. TWO (2) INDEPENDENT ¾" WATER SERVICE LINES MAY BE INSTALLED INSIDE ONE (1) – TWO (2") INCH SCHEDULE 40 PVC CONDUIT OR TWO (2) INDEPENDENT 1" WATER SERVICE LINES MAY BE INSTALLED INSIDE ONE – THREE (3") INCH SCHEDULE 40 PVC CONDUIT, BUT EACH WATER SERVICE SHALL BE TAPPED DIRECTLY TO THE WATER MAIN. SPLIT SERVICES ARE NOT ALLOWED BY HRW. IF SIDEWALKS ARE PROPOSED, THE CONDUIT MUST EXTEND PAST THE SIDEWALK.

P. THE WATER MAIN(S), FIRE HYDRANTS, GATE VALVES, SERVICE LINES, METER SETTERS AND ASSOCIATED APPURTENANCES MUST BE RATED FOR 200 PSI AND HYDROSTATICALLY PRESSURE TESTED TO 200 PSI. THE HYDROSTATIC PRESSURE TEST(S) MUST BE WITNESSED BY THE HRW UTILITY CONSTRUCTION INSPECTOR. THE UTILITY CONTRACTOR MUST NOTIFY HRW WHEN THEY ARE READY TO BEGIN FILLING IN LINES AND COORDINATE WITH HARNETT REGIONAL WATER TO WITNESS ALL PRESSURE TESTING.

Q. THE UTILITY CONTRACTOR SHALL CONDUCT A PNEUMATIC PRESSURE TEST USING COMPRESSED AIR OR OTHER INERT GAS ON THE STAINLESS STEEL TAPPING SLEEVE(S) PRIOR TO MAKING THE TAP ON THE EXISTING WATER THIS PNEUMATIC PRESSURE TEST MUST BE WITNESSED BY THE HRW UTILITY CONSTRUCTION INSPECTOR. THE UTILITY CONTRACTOR SHALL USE ROMAC BRAND STAINLESS STEEL TAPPING SLEEVE(S) OR APPROVED EQUAL FOR ALL TAPS MADE IN HARNETT COUNTY. ALL NEW WATER LINE EXTENSIONS MUST BEGIN WITH A RESILIENT WEDGE TYPE GATE VALVE SIZED EQUAL TO THE DIAMETER OF THE NEW WATER LINE EXTENSION IN ORDER TO PROVIDE A MEANS OF ISOLATION BETWEEN HARNETT REGIONAL WATER'S EXISTING WATER MAINS AND THE NEW WATER LINE EXTENSIONS UNDER CONSTRUCTION.

R. ALL WATER MAINS WILL BE CONSTRUCTED WITH SDR-21 PVC PIPE OR CLASS 50 DUCTILE IRON PIPE RATED FOR AT LEAST 200 PSI OR GREATER. ALL PIPES MUST BE PROTECTED DURING LOADING, TRANSPORT, UNLOADING, STAGING, AND INSTALLATION. PVC PIPE MUST BE PROTECTED FROM EXTENDED EXPOSURE TO SUNLIGHT PRIOR TO INSTALLATION.

S. ALL WATER MAINS WILL BE FLUSHED AND DISINFECTED IN STRICT ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE HARNETT REGIONAL WATER. ALL WATER SAMPLES COLLECTED FOR BACTERIA TESTING WILL BE COLLECTED BY THE HRW UTILITY CONSTRUCTION INSPECTOR AND TESTED IN THE HRW LABORATORY.

T. ALL FITTINGS LARGER THAN TWO (2") INCHES DIAMETER SHALL BE DUCTILE IRON. HRW REQUIRES THAT MECHANICAL JOINTS BE ASSEMBLED WITH GRIP RINGS AS "MEGALUG" FITTINGS ARE NOT APPROVED BY HARNETT REGIONAL WATER FOR PIPE SIZES SMALLER THAN TWELVE INCHES (12") DIAMETER. PVC PIPE USED FOR WATER MAINS SHALL BE CONNECTED BY SLIP JOINT OR MECHANICAL JOINT WITH GRIP RINGS. GLUED PIPE JOINTS ARE NOT ALLOWED ON PVC PIPE USED FOR WATER MAINS IN HARNETT COUNTY.

U. HRW REQUIRES THAT THE UTILITY CONTRACTOR INSTALL TRACER WIRE IN THE TRENCH WITH ALL WATER LINES. THE TRACER WIRE SHALL BE 12 GA. INSULATED, SOLID COPPER CONDUCTOR AND IT SHALL BE TERMINATED AT THE TOP OF THE VALVE BOXES OR MANHOLES. NO SPLICED WIRE CONNECTIONS SHALL BE MADE UNDERGROUND ON TRACER WIRE INSTALLED IN HARNETT COUNTY. THE TRACER WIRE MAY BE SECURED WITH DUCT TAPE TO THE TOP OF THE PIPE BEFORE BACKFILLING.

V. THE UTILITY CONTRACTOR WILL PROVIDE PROFESSIONAL ENGINEER (PE) AND THE HRW UTILITY CONSTRUCTION INSPECTOR WITH A SET OF RED LINE FIELD DRAWINGS TO IDENTIFY THE INSTALLED LOCATIONS OF THE WATER LINE(S) AND ALL ASSOCIATED SERVICES. ALL CHANGE ORDERS MUST BE PRE-APPROVED BY HRW AND THE PROFESSIONAL ENGINEER (PE) IN WRITING AND PROPERLY DOCUMENTED IN THE RED LINE FIELD DRAWINGS.

W. THE UTILITY CONTRACTOR SHALL SPOT DIG TO EXPOSE EACH UTILITY PIPE OR LINE WHICH MAY CONFLICT WITH CONSTRUCTION OF PROPOSED WATER LINE EXTENSIONS WELL IN ADVANCE TO VERIFY LOCATIONS OF THE EXISTING UTILITIES. THE UTILITY CONTRACTOR SHALL PROVIDE BOTH HORIZONTAL AND VERTICAL CLEARANCES TO THE PROFESSIONAL ENGINEER (PE) TO ALLOW THE PE TO ADJUST THE WATER LINE DESIGN IN ORDER TO AVOID CONFLICTS WITH EXISTING UNDERGROUND UTILITIES. THE UTILITY CONTRACTOR SHALL COORDINATE WITH THE UTILITY OWNER AND BE RESPONSIBLE FOR TEMPORARY RELOCATION AND/OR SECURING EXISTING UTILITY POLES, PIPES, WIRES, CABLES, SIGNS AND/OR UTILITIES INCLUDING SERVICES IN ACCORDANCE WITH THE UTILITY OWNER REQUIREMENTS DURING WATER LINE INSTALLATION, GRADING AND STREET CONSTRUCTION.

X. PRIOR TO THE COMMENCEMENT OF ANY WORK WITHIN ESTABLISHED UTILITY EASEMENTS OR NCDOT RIGHT-OF-WAYS THE UTILITY CONTRACTOR IS REQUIRED TO HAVE A SIGNED NCDOT ENCROACHMENT AGREEMENT POSTED ON SITE AND NOTIFY ALL CONCERNED UTILITY COMPANIES IN ACCORDANCE WITH G.S. 87-102. THE UTILITY CONTRACTOR MUST CALL THE NC ONE CALL CENTER AT 811 OR (800) 632-4949 TO VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION. EXISTING UTILITIES SHOWN IN THESE PLANS ARE TAKEN FROM MAPS FURNISHED BY VARIOUS UTILITY COMPANIES AND HAVE NOT BEEN PHYSICALLY LOCATED OR VERIFIED BY THE P.E. (I.E. TELEPHONE, CABLE, WATER, SEWER, ELECTRICAL POWER, FIBER OPTIC, NATURAL GAS, ETC.). THE UTILITY CONTRACTOR WILL BE RESPONSIBLE TO REPAIR ANY AND ALL DAMAGES TO THE SATISFACTION OF THE RELATED UTILITY COMPANY.

Y. THE UTILITY CONTRACTOR SHALL PROVIDE HRW WITH AT LEAST ONE (1) FIRE HYDRANT WRENCH AND ONE (1) BREAK-AWAY FLANGE KIT FOR EVERY SUBDIVISION WITH FIRE HYDRANTS DEVELOPED IN HARNETT COUNTY. THESE ITEMS MUST BE PROVIDED TO HRW BEFORE THE FINAL INSPECTION WILL BE SCHEDULED BY THE HRW UTILITY CONSTRUCTION INSPECTOR. IN ADDITION, THE UTILITY CONTRACTOR SHALL INSTALL A 4" X 4" CONCRETE VALVE MARKER AT THE EDGE OF THE RIGHT-OF-WAY TO IDENTIFY THE LOCATION OF EACH GATE VALVE INSTALLED IN THE NEW WATER SYSTEM WITH THE EXCEPTION OF THE FIRE HYDRANT ISOLATION VALVES. THE CONTRACTOR SHALL MEASURE THE DISTANCE FROM THE CENTER OF THE CONCRETE MARKER TO THE CENTER OF THE VALVE BOX. THIS DISTANCE (IN LINEAR SHALL BE STAMPED ON THE BRASS PLATE LOCATED ON THE TOP OF THE CONCRETE VALVE MARKER. IN LIEU OF INSTALLING THE CONCRETE VALVE MARKERS, THE UTILITY CONTRACTOR MAY PROVIDE AT LEAST TWO MEASUREMENTS FROM TWO INDEPENDENT PERMANENT ABOVE GROUND STRUCTURES TO THE PROFESSIONAL ENGINEER (PE) IN THE RED LINE DRAWINGS TO IDENTIFY THE VALVE LOCATIONS. THE PROFESSIONAL ENGINEER (PE) MUST INCLUDE THESE MEASUREMENTS IN THE AS-BUILT RECORD DRAWINGS SUBMITTED TO HRW.

Z. THE UTILITY CONTRACTOR WILL BE RESPONSIBLE FOR ANY AND ALL REPAIRS DUE TO LEAKAGE DAMAGE FROM POOR WORKMANSHIP DURING THE ONE YEAR WARRANTY PERIOD ONCE THE WATER SYSTEM IMPROVEMENTS HAVE BEEN ACCEPTED BY HARNETT REGIONAL WATER. HARNETT REGIONAL WATER WILL PROVIDE MAINTENANCE AND REPAIRS WHEN REQUESTED AND BILL THE DEVELOPER AND/OR UTILITY CONTRACTOR IF NECESSARY DUE TO LACK OF RESPONSE WITHIN 48 HOURS OF NOTIFICATION OF WARRANTY THE UTILITY CONTRACTOR WILL BE RESPONSIBLE FOR ANY AND ALL REPAIRS DUE TO DAMAGES RESULTING FROM FAILURE TO LOCATE THE NEW WATER LINES AND ASSOCIATED APPURTENANCES FOR OTHER UTILITIES AND THEIR CONTRACTORS UNTIL THE WATER LINES HAVE BEEN APPROVED BY NCDEQ AND ACCEPTED BY HRW. THE FINAL INSPECTION OF WATER SYSTEM IMPROVEMENTS CANNOT BE SCHEDULED WITH HRW UNTIL THE STREETS HAVE BEEN PAVED; THE RIGHTS-OF-WAY AND UTILITY EASEMENTS HAVE BEEN SEEDED AND STABILIZED WITH AN ADEQUATE STAND OF GRASS IN PLACE TO PREVENT EROSION ISSUES ON SITE.

AA. THE ENGINEER OF RECORD IS RESPONSIBLE TO ENSURE THAT CONSTRUCTION IS, AT ALL TIMES, IN COMPLIANCE WITH ACCEPTED SANITARY ENGINEERING PRACTICES AND APPROVED PLANS AND SPECIFICATIONS. NO FIELD CHANGES TO THE APPROVED PLANS ARE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL BY HRW. A COPY OF EACH ENGINEER'S FIELD REPORT IS TO BE SUBMITTED TO HRW AS EACH SUCH INSPECTION IS MADE ON SYSTEM IMPROVEMENTS OR TESTING IS PERFORMED BY THE CONTRACTOR. WATER AND SEWER INFRASTRUCTURE MUST PASS ALL TESTS REQUIRED BY HRW SPECIFICATIONS AND THOSE OF ALL APPLICABLE REGULATORY AGENCIES. THESE TESTS INCLUDE, BUT ARE NOT LIMITED TO: AIR TEST, VACUUM TEST, MANDREL TEST, VISUAL TEST, PRESSURE TEST, BACTERIOLOGICAL TEST, ETC. A HRW INSPECTOR MUST BE PRESENT DURING TESTING AND ALL TEST RESULTS SHALL BE SUBMITTED TO HRW. ALL TESTS MUST BE SATISFIED BEFORE THE FINAL INSPECTION WILL BE SCHEDULED WITH THE HRW INSPECTOR. THE ENGINEER OF RECORD MUST REQUEST IN WRITING TO SCHEDULE THE FINAL INSPECTION ONCE ALL CONSTRUCTION IS COMPLETE. THE DEVELOPER'S ENGINEER OF RECORD AND THE HRW UTILITY CONSTRUCTION INSPECTOR SHALL PREPARE A WRITTEN PUNCH LIST OF ANY DEFECTS OR DEFICIENCIES NOTED DURING THE FINAL INSPECTION, SHOULD ANY EXIST. UPON COMPLETION OF THE PUNCH LIST, THE DEVELOPER'S ENGINEER OF RECORD WILL SCHEDULE ANOTHER INSPECTION. IN THE EVENT THE NUMBER OF INSPECTIONS PERFORMED BY THE HRW EXCEEDS TWO, ADDITIONAL FEES MAY BE ASSESSED TO THE DEVELOPER.

SANITARY SEWER

A. THE PROFESSIONAL ENGINEER (PE) SHALL OBTAIN AND SUPPLY A COPY OF THE SEWER PERMIT FOR THE CONSTRUCTION AND OPERATION OF THE WASTEWATER COLLECTION SYSTEM TO THE UTILITY CONTRACTOR BEFORE THE CONSTRUCTION OF THE SANITARY SEWER LINE, SEWER LIFT STATION AND ASSOCIATED FORCE MAIN SHALL BEGIN. THE UTILITY CONTRACTOR MUST POST A COPY OF THE SEWER PERMIT ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NCDEQ) ON SITE PRIOR TO THE START OF CONSTRUCTION. THE PERMIT MUST BE MAINTAINED ON SITE DURING THE CONSTRUCTION OF THE SEWER SYSTEM IMPROVEMENTS.

B. THE UTILITY CONTRACTOR SHALL NOTIFY HARNETT REGIONAL WATER (HRW) AND THE PROFESSIONAL ENGINEER (PE) AT LEAST TWO DAYS PRIOR TO CONSTRUCTION COMMENCING. THE UTILITY CONTRACTOR MUST SCHEDULE A PRE-CONSTRUCTION CONFERENCE WITH MR. CHAD EVERETTE, HRW UTILITY CONSTRUCTION INSPECTOR AT LEAST TWO (2) DAYS BEFORE CONSTRUCTION WILL BEGIN AND THE UTILITY CONTRACTOR MUST COORDINATE WITH HRW FOR REGULAR INSPECTION VISITATIONS AND ACCEPTANCE OF THE WASTEWATER SYSTEM(S). CONSTRUCTION WORK SHALL BE PERFORMED ONLY DURING THE NORMAL WORKING HOURS OF HRW WHICH IS 8:00 AM – 5:00 PM MONDAY THROUGH FRIDAY. HOLIDAY AND WEEKEND WORK IS NOT PERMITTED BY HRW.

C. THE PROFESSIONAL ENGINEER (PE) SHALL PROVIDE HRW WITH A SET OF NCDEQ APPROVED PLANS MARKED "RELEASED FOR CONSTRUCTION" AT LEAST TWO DAYS PRIOR TO CONSTRUCTION COMMENCING. HRW WILL STAMP THE APPROVED PLANS AS "RELEASED FOR CONSTRUCTION" AND PROVIDE COPIES TO THE UTILITY CONTRACTOR. THE REGISTERED LAND SURVEYOR (RLS) SHALL STAKE OUT ALL LOT CORNERS AND ESTABLISH GRADE STAKES FOR THE PROPOSED FINISH GRADE FOR EACH STREET AND SEWER LINE BEFORE THE UTILITY CONTRACTOR BEGINS CONSTRUCTION OR INSTALLATION OF THE MANHOLES, SANITARY SEWER GRAVITY LINE(S), SEWER LIFT STATIONS AND/OR SANITARY SEWER FORCE MAIN(S). THE GRADE STAKES SHOULD BE SET WITH A CONSISTENT OFFSET FROM THE STREET CENTERLINE SO AS NOT TO INTERFERE WITH THE STREET GRADING OR UTILITY CONSTRUCTION.

D. THE UTILITY CONTRACTOR SHALL PROVIDE THE HRW UTILITY CONSTRUCTION INSPECTOR WITH MATERIAL SUBMITTALS AND SHOP DRAWINGS FOR ALL PROJECT MATERIALS PRIOR TO THE CONSTRUCTION OF ANY GRAVITY SEWER LINE(S), MANHOLE(S), SEWER LIFT STATION(S) AND ASSOCIATED FORCE MAIN(S) IN HARNETT COUNTY. THE MATERIALS TO BE USED ON THE PROJECT MUST MEET THE ESTABLISHED SPECIFICATIONS OF HRW AND BE APPROVED BY THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION. ALL SUBSTANDARD MATERIALS OR MATERIALS NOT APPROVED FOR USE IN HARNETT COUNTY FOUND ON THE PROJECT SITE MUST BE REMOVED IMMEDIATELY WHEN NOTIFIED BY THE HRW UTILITY CONSTRUCTION INSPECTOR.

E. THE SANITARY SEWER LATERAL CONNECTIONS SHOULD BE INSTALLED 90° (PERPENDICULAR) TO THE SANITARY SEWER GRAVITY LINES WITH SCHEDULE 40 PVC PIPE. HRW REQUIRES THE UTILITY CONTRACTOR TO PROVIDE THE PROFESSIONAL ENGINEER (PE) WITH ACCURATE MEASUREMENTS FOR LOCATING SANITARY SEWER SERVICE LATERAL AND ASSOCIATED EACH SANITARY SEWER CLEAN-OUT. THESE MEASUREMENTS SHOULD BE TAKEN FROM THE NEAREST DOWNSTREAM MANHOLE UP ALONG THE SANITARY SEWER MAIN TO THE IN-LINE WYE FITTING (OR TAPPING SADDLE) AND THEN ANOTHER MEASUREMENT FROM THE IN-LINE WYE FITTING (OR TAPPING TO THE 4" X 4" LONG SWEEP COMBINATION WYE FITTING AT THE BOTTOM OF THE SEWER CLEAN-OUT STACK. THESE FIELD MEASUREMENTS MUST BE PROVIDED TO THE PROFESSIONAL ENGINEER (PE) IN THE RED LINE DRAWINGS FROM THE UTILITY CONTRACTOR FOR PROPER DOCUMENTATION IN THE AS-BUILT RECORD DRAWINGS SUBMITTED TO HRW.

F. THE UTILITY CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE THE NEWLY INSTALLED SANITARY SEWER GRAVITY LINE(S), SANITARY SEWER FORCE MAIN(S), SANITARY SEWER SERVICE LATERAL(S) AND ALL ASSOCIATED SEWER CLEAN-OUT(S) IN THE PROPOSED SANITARY SEWER SYSTEM FOR OTHER UTILITY COMPANIES AND THEIR CONTRACTORS UNTIL THE NEW SANITARY SEWER LINE(S) AND ASSOCIATED APPURTENANCES HAVE BEEN APPROVED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NCDEQ) AND ACCEPTED BY HRW. ALL NEW SANITARY SEWER LINES MUST HAVE AT LEAST THREE (3 FT. ) FEET OF COVER AND EXTEND UNDER ALL EXISTING WATER MAIN AND STORM WATER LINES WITH A LEAST 24" OF VERTICAL CLEARANCE BELOW THE BOTTOM OF THE EXISTING WATER MAIN AND STORM WATER LINES. ALL DUCTILE IRON SEWER PIPING MUST BE 401 EPOXY COATED OR APPROVED EQUAL.

G. THE SANITARY SEWER GRAVITY LINE(S), MANHOLE(S), SANITARY SEWER SERVICE LATERAL(S) AND ASSOCIATED CLEAN-OUT(S) SHALL BE CONSTRUCTED IN STRICT ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE HARNETT REGIONAL WATER. THE SANITARY SEWER GRAVITY LINE(S) MUST PNEUMATICALLY PRESSURE TESTED WITH COMPRESSED AIR AT 5 PSI AND THE SANITARY SEWER FORCE MAIN(S) MUST HYDROSTATICALLY PRESSURE TESTED WITH WATER OR AIR AT 200 PSI. SANITARY SEWER MANHOLES MUST BE VACUUM TESTED TO 10 INCHES OF MERCURY AND CANNOT DROP BELOW 9 INCHES IN 60 SECONDS FOR 4 FT. DIAMETER MANHOLES, 75 SECONDS FOR 5 FT. DIAMETER MANHOLES. THE TEST MUST BE IN ACCORDANCE WITH THE FOLLOWING STANDARDS: FOR DUCTILE IRON PIPELINES TEST IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF ASTM C924. FOR PVC PIPELINES TEST IN ACCORDANCE WITH ASTM F1417-98 AND UBPPA UNI-B-6. VACUUM TESTING SHALL BE PERFORMED IN ACCORDANCE WITH ASTM C1244. THE HRW UTILITY CONSTRUCTION INSPECTOR AND ENGINEER MUST WITNESS ALL TESTS MENTIONED ABOVE.

H. PRIOR TO ACCEPTANCE, ALL SEWER SERVICE LATERALS WILL BE INSPECTED TO ENSURE THAT THEY ARE INSTALLED AT THE PROPER DEPTH. ALL SEWER CLEAN-OUTS MUST BE INSTALLED SO THE 4" X 4" LONG SWEEP COMBINATION WYE IS AT LEAST THREE (3') FEET BUT NO MORE THAN FOUR (4') FEET BELOW THE FINISH GRADE UNLESS OTHERWISE APPROVED IN WRITING BY HRW. THE SEWER CLEANOUTS SHALL HAVE A FOUR (4") SCHEDULE 40 PVC PIPE STUBBED UP FROM BOTH ENDS OF THE 4" X 4" LONG SWEEP COMBINATION WYE TO BE AT LEAST TWO (2') FEET ABOVE THE FINISH GRADE AND COVER EACH END WITH A FOUR (4") INCH TEMPORARY CAP TO KEEP OUT DIRT, SAND, ROCKS, WATER AND CONSTRUCTION DEBRIS. THE VERTICAL STACK ON EACH CLEAN-OUT MUST BE PROVIDED WITH A CONCRETE DONUT FOR PROTECTION.

I. ONCE THE SANITARY SEWER GRAVITY LINE(S) HAVE BEEN INSTALLED, PNEUMATICALLY PRESSURE TESTED AND IN PLACE FOR AT LEAST 30 DAYS, THE UTILITY CONTRACTOR MUST CONTACT THE HRW UTILITY CONSTRUCTION INSPECTOR TO WITNESS THE MANDREL TEST ON EACH PVC SANITARY SEWER GRAVITY LINE. THE UTILITY CONTRACTOR WILL NOTIFY HRW TO SCHEDULE THE MANDREL TESTING. THE MANDREL AND PROVING RING MUST BE SUPPLIED BY THE UTILITY CONTRACTOR. CLOSED CIRCUIT VIDEO CAMERA INSPECTIONS (AT THE UTILITY CONTRACTOR'S EXPENSE) MAY BE REQUIRED BY THE HRW UTILITY CONSTRUCTION INSPECTOR IF THE MANDREL AND MIRROR TAMPING TESTING CANNOT BE COMPLETED WITH SATISFACTORY RESULTS. THE SANITARY SEWER LINES SHOULD BE FLUSHED CLEAN USING A SEWER BALL OF THE PROPER DIAMETER BEFORE ANY MANDREL TESTING CAN BE PERFORMED. THE UTILITY CONTRACTOR IS RESPONSIBLE TO REMOVE ALL DIRT, SAND, SILT, GRAVEL, MUD AND DEBRIS FROM THE NEWLY CONSTRUCTED SEWER LINES EXERCISING CARE TO KEEP THE HARNETT REGIONAL WATER'S EXISTING SANITARY SEWER SYSTEMS CLEAN. SANITARY SEWER FORCE MAIN(S) SHALL BE PRESSURE TESTED TO 200 PSI FOR AT LEAST 2 HOURS LIKE WATER LINES.

J. THE UTILITY CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE THE NEWLY INSTALLED SANITARY SEWER SYSTEM(S) FOR OTHER UTILITY COMPANIES AND THEIR CONTRACTORS UNTIL THE NEW SANITARY SEWER SYSTEM(S) HAVE BEEN APPROVED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NCDEQ) AND ACCEPTED BY HRW.

K. HRW REQUIRES THAT THE UTILITY CONTRACTOR INSTALL TRACER WIRE IN THE TRENCH WITH ALL SANITARY SEWER FORCE MAINS. THE TRACER WIRE SHALL BE 12 GA. INSULATED, SOLID COPPER CONDUCTOR AND IT SHALL BE TERMINATED AT THE TOP OF THE VALVE BOXES OR MANHOLES. NO SPLICED WIRE CONNECTIONS SHALL BE MADE UNDERGROUND ON TRACER WIRE INSTALLED IN HARNETT COUNTY. THE TRACER WIRE MAY BE SECURED WITH DUCT TAPE TO THE TOP OF THE PIPE BEFORE BACKFILLING. THE TRACER WIRE IS NOT REQUIRED FOR THE GRAVITY SEWER LINE(S) BETWEEN MANHOLES.

L. THE UTILITY CONTRACTOR SHALL PROVIDE THE PROFESSIONAL ENGINEER AND HRW UTILITY CONSTRUCTION INSPECTOR WITH A SET OF RED LINE DRAWINGS IDENTIFYING THE COMPLETE SEWER SYSTEM INSTALLED FOR EACH PROJECT. THE RED LINE DRAWINGS SHOULD IDENTIFY THE MATERIALS, PIPE SIZES AND APPROXIMATE DEPTHS OF THE SEWER LINES AS WELL AS THE INSTALLED LOCATIONS OF THE MANHOLE(S), SANITARY SEWER GRAVITY LINE(S), SANITARY SEWER SERVICE LATERALS, CLEAN-OUTS, SEWER LIFT STATION(S) AND ASSOCIATED FORCE MAIN(S). THE RED LINE DRAWINGS SHOULD CLEARLY IDENTIFY ANY DEVIATIONS FROM THE NCDEQ APPROVED PLANS. ALL CHANGE ORDERS MUST BE APPROVED BY HRW AND THE PROFESSIONAL ENGINEER (PE) IN WRITING AND PROPERLY DOCUMENTED IN THE RED LINE FIELD DRAWINGS.

M. PRIOR TO THE COMMENCEMENT OF ANY WORK WITHIN ESTABLISHED UTILITY EASEMENTS OR NCDOT RIGHT-OF-WAYS THE UTILITY CONTRACTOR IS REQUIRED TO NOTIFY ALL CONCERNED UTILITY COMPANIES IN ACCORDANCE WITH G.S. 87-102. THE UTILITY CONTRACTOR MUST CALL THE NC ONE CALL CENTER AT 811 OR (800) 632-4949 TO VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION. EXISTING UTILITIES SHOWN IN THESE PLANS ARE TAKEN FROM MAPS FURNISHED BY VARIOUS UTILITY COMPANIES AND HAVE NOT BEEN PHYSICALLY LOCATED BY THE P.E. (I.E. TELEPHONE, CABLE, WATER, SEWER, ELECTRICAL POWER, FIBER OPTIC, NATURAL GAS, ETC.).

N. THE UTILITY CONTRACTOR SHALL SPOT DIG TO EXPOSE EACH EXISTING UTILITY PIPE OR LINE WHICH MAY CONFLICT WITH CONSTRUCTION OF PROPOSED SANITARY SEWER LINE EXTENSIONS WELL IN ADVANCE TO VERIFY LOCATIONS OF THE EXISTING UTILITIES. THE UTILITY CONTRACTOR SHALL PROVIDE BOTH HORIZONTAL AND VERTICAL CLEARANCES TO THE PROFESSIONAL ENGINEER (PE) TO ALLOW THE PE TO ADJUST THE SANITARY SEWER LINE DESIGN IN ORDER TO AVOID CONFLICTS WITH EXISTING UNDERGROUND UTILITIES. THE UTILITY CONTRACTOR SHALL COORDINATE WITH THE UTILITY OWNER AND BE RESPONSIBLE FOR TEMPORARY RELOCATION OF EXISTING UTILITIES AND/OR SECURING EXISTING UTILITY POLES, PIPES, WIRES, CABLES, SIGNS AND/OR UTILITIES INCLUDING SERVICES IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS DURING SANITARY SEWER LINE INSTALLATION, GRADING AND STREET CONSTRUCTION.

O. WHEN MAKING A TAP ON AN EXISTING SEWER FORCE MAIN, THE UTILITY CONTRACTOR MUST HAVE A PERMIT FROM THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NCDEQ) PRIOR TO BEGIN THE TAP WORK. THE UTILITY CONTRACTOR SHALL CONDUCT A PNEUMATIC PRESSURE TEST USING COMPRESSED AIR OR OTHER INERT GAS ON THE STAINLESS STEEL TAPPING SLEEVE AND GATE VALVE PRIOR TO MAKING THE TAP ON AN EXISTING SANITARY SEWER FORCE MAIN. THIS PNEUMATIC PRESSURE TEST MUST BE WITNESSED BY THE HRW UTILITY CONSTRUCTION INSPECTOR. THE UTILITY CONTRACTOR SHALL USE ROMAC BRAND STAINLESS STEEL TAPPING SLEEVE(S) OR APPROVED EQUAL FOR ALL TAPS MADE ON SANITARY SEWER FORCE MAINS IN HARNETT COUNTY. THE UTILITY CONTRACTOR SHALL USE ROMAC BRAND STYLE "CB" SEWER SADDLES WITH STAINLESS STEEL BANDS OR APPROVED EQUAL FOR ALL TAPS MADE ON EXISTING SANITARY SEWER GRAVITY LINES IN HARNETT COUNTY.

P. THE UTILITY CONTRACTOR SHALL PROVIDE A GREASE TRAP FOR EACH SANITARY SEWER SERVICE LATERAL THAT WILL BE CONNECTED TO A RESTAURANT, FOOD PROCESSING FACILITY AND ANY OTHER COMMERCIAL OR INDUSTRIAL FACILITY AS REQUIRED BY THE HARNETT COUNTY FAT, OIL & GREASE ORDINANCE. THE GREASE TRAP MUST BE RATED FOR A MINIMUM CAPACITY OF AT LEAST 1,000 ALLONS UNLESS OTHERWISE APPROVED IN WRITING BY THE HRW PRE-TREATMENT COORDINATOR. GARBAGE DISPOSALS SHOULD NOT BE INSTALLED IN HOMES AND BUSINESSES THAT DISCHARGE WASTEWATER TO THE HARNETT REGIONAL WATER'S SANITARY SEWER SYSTEM AS THEY ARE NOT APPROVED BY HRW.

Q. EACH SEWER LIFT STATION MUST BE PROVIDED WITH THREE PHASE POWER (AT LEAST 480 VOLTS) AND CONSTRUCTED TO MEET THE MINIMUM REQUIREMENTS OF THE LATEST VERSION OF THE NATIONAL ELECTRICAL CODE AND HARNETT REGIONAL WATER STANDARD SPECIFICATIONS AND DETAILS. IF THREE PHASE POWER IS NOT AVAILABLE FROM THE POWER COMPANY OTHER ARRANGEMENTS MUST BE APPROVED BY HRW ENGINEERING PRIOR TO THE START OF CONSTRUCTION.

R. WHERE A NEW SANITARY SEWER FORCE MAIN IS CONNECTED TO AN EXISTING MANHOLE IN THE HARNETT REGIONAL WATER SEWER COLLECTIONS SYSTEM, THE UTILITY CONTRACTOR MUST PROVIDE A PROTECTIVE COATING (EPOXY) FOR THE INTERIOR SURFACES OF THE MANHOLE TO PROTECT IT AGAINST CORROSION, EROSION AND DETERIORATION FROM THE RELEASE OF SEWER GASES SUCH AS METHANE AND HYDROGEN SULFIDE.

S. THE SEWER LIFT STATION DESIGN AND ASSOCIATED EQUIPMENT MUST MEET OR EXCEED THE MINIMUM REQUIREMENTS FOR HARNETT COUNTY SEWER LIFT STATIONS. EACH SANITARY SEWER LIFT STATION MUST BE CONSTRUCTED WITH AN ALL-WEATHER ACCESS ROAD THAT IS AT LEAST 20 FEET WIDE. THE LIFT STATION SITE MUST BE COVERED WITH WEED BLOCKING MATERIAL AND AT LEAST SIX (6") INCHES OF ABC STONE (CRUSH AND RUN).

T. ONCE A SEWER LIFT STATION HAS BEEN INSTALLED, THE UTILITY CONTRACTOR IS RESPONSIBLE TO SCHEDULE A DRAW DOWN TEST WITH HRW ENGINEERING AND COLLECTIONS STAFF, THE PROFESSIONAL ENGINEER (PE), THE ELECTRICIAN, THE ORIGINAL EQUIPMENT MANUFACTURERS (OEM) REPRESENTATIVES [FOR BOTH THE PUMPS AND THE GENERATOR]. THIS DRAW DOWN TEST MUST BE COMPLETED WITH POWER SUPPLIED FROM THE ELECTRICAL UTILITY COMPANY AND WITH POWER SUPPLIED BY THE EMERGENCY GENERATOR WITH SATISFACTORY RESULTS BEFORE FINAL INSPECTIONS ARE CONDUCTED BY THE HRW UTILITY CONSTRUCTION INSPECTOR.

U. ONCE THE UTILITY CONTRACTOR COMPLETES THE INSTALLATION OF A SEWER LIFT STATION, THE PROFESSIONAL ENGINEER (PE) MUST SUBMIT THE SEWER PERMIT CERTIFICATION AND AS-BUILT RECORD DRAWINGS TO THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NCDEQ) AND HRW FOR FINAL APPROVAL. THE UTILITY CONTRACTOR MUST SUPPLY HRW ENGINEERING STAFF WITH THREE ORIGINAL OPERATION & MAINTENANCE (O&M) MANUALS ALONG WITH THE ASSOCIATED PUMP CURVES AND ELECTRICAL SCHEMATICS FOR THE ASSOCIATED SEWER LIFT STATION EQUIPMENT INCLUDING ALL WARRANTY INFORMATION AND DOCUMENTATION.

V. ONCE THE UTILITY CONTRACTOR COMPLETES THE INSTALLATION OF A SEWER LIFT STATION, THE DEVELOPER MUST PAY HRW THE ESTABLISHED SYSTEM CONTROL AND DATA ACQUISITION (SCADA) FEES BEFORE THE SCADA SYSTEM WILL BE INSTALLED AT THE NEW SEWER LIFT STATION. THE SCADA SYSTEM MUST BE INSTALLED AND OPERATIONAL BEFORE THE UTILITIES MAY BE ACCEPTED BY HRW AND PLACED INTO OPERATION.

W. HRW REQUIRES THE UTILITY CONTRACTOR TO PROVIDE ALL NECESSARY EQUIPMENT AND DEVICES FOR THE TESTING AND INSPECTION OF THE SANITARY SEWER SYSTEM. THE EQUIPMENT AND DEVICES MAY INCLUDE BUT NOT LIMITED TO LAMPING WITH MIRRORS, MANDRELS, SEWER BALLS, PLUGS, AIR COMPRESSORS AND ASSOCIATED COMPRESSED AIR LINES. IF THE HRW UTILITY CONSTRUCTION INSPECTOR DEEMS THAT A CLOSED CIRCUIT VIDEO CAMERA INSPECTION OF THE NEWLY CONSTRUCTED SEWER SYSTEM IS NECESSARY, THEN ALL COSTS FOR THE CLOSED CIRCUIT CAMERA INSPECTION WILL BE THE RESPONSIBILITY OF THE UTILITY CONTRACTOR. ALL CLOSED CIRCUIT VIDEO CAMERA INSPECTIONS MUST BE RECORDED ON VHS TAPES THAT WILL RELEASED TO HRW FOR RECORD KEEPING, REVIEW AND APPROVAL OF THE SEWER SYSTEM.

X. ANY USE OF SEWER PLUGS TO TEMPORARILY BLOCK HARNETT REGIONAL WATER'S EXISTING SANITARY SEWER LINES MUST BE COORDINATED WITH THE HRW COLLECTIONS SUPERVISOR AT LEAST TWO (2) DAYS IN ADVANCE OF INSTALLING THE PLUGS. THE SEWER PLUGS MUST BE REMOVED AS SOON AS POSSIBLE ONCE THE NEW SANITARY SEWER LINES HAVE BEEN INSPECTED, PRESSURE TESTED, MANDREL TESTED, APPROVED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NCDEQ) AND ACCEPTED BY HRW TO ALLOW THE SEWER TO FLOW AS DESIGNED IN HARNETT REGIONAL WATER'S EXISTING SANITARY SEWER LINES OR WHEN SO ORDERED BY THE HRW COLLECTIONS SUPERVISOR TO LIMIT INTERRUPTIONS TO THE NORMAL FLOW OF THE SANITARY SEWER COLLECTION SYSTEM(S). THE UTILITY CONTRACTOR MUST PROVIDE THE PUMPS HOSES AND NECESSARY CONNECTORS FOR A TEMPORARY PUMP AROUND SETUP IF REQUIRED BY THE HRW COLLECTIONS SUPERVISOR. MR. RANDOLPH CLEGG, HRW COLLECTIONS SUPERVISOR MAY BE CONTACTED BETWEEN 8:00 AM AND 5:00 PM MONDAY THROUGH FRIDAY AT (910) 893-7575 EXTENSION 3241.

Y. THE UTILITY CONTRACTOR WILL BE RESPONSIBLE FOR ANY AND ALL REPAIRS DUE TO LEAKAGE OR DAMAGE RESULTING FROM POOR WORKMANSHIP DURING THE ONE (1) YEAR WARRANTY PERIOD ONCE THE SEWER SYSTEM IMPROVEMENTS HAVE BEEN APPROVED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NCDEQ) AND ACCEPTED BY THE UTILITY CONTRACTOR WILL BE RESPONSIBLE FOR ANY AND ALL REPAIRS DUE TO DAMAGES RESULTING FROM FAILURE TO LOCATE THE NEW SANITARY SEWER LINES AND ASSOCIATED APPURTENANCES FOR OTHER UTILITIES AND THEIR CONTRACTORS UNTIL THE SANITARY SEWER LINES HAVE BEEN APPROVED BY NCDEQ AND ACCEPTED BY HRW. HRW WILL PROVIDE MAINTENANCE AND WARRANTY REPAIRS IF NECESSARY DUE TO LACK OF RESPONSE WITHIN 48 HOURS OF NOTIFICATION OF WARRANTY HRW WILL INVOICE THE DEVELOPER AND/OR UTILITY CONTRACTOR FOR MATERIALS AND LABOR IN SUCH CASES.

Z. IN DEVELOPMENTS AND PROJECTS THAT REQUIRE UTILITY EASEMENTS TO BE ESTABLISHED FOR FUTURE HRW RIGHT-OF-WAY, THE REGISTERED LAND SURVEYOR (RLS) MUST PROVIDE THE HRW RIGHT-OF-WAY AGENT WITH AN OFFICIAL COPY OF THE RECORDED PLAT AND LEGAL DESCRIPTION OF THE SAID EASEMENT AS RECORDED WITH THE HARNETT COUNTY REGISTER OF DEEDS. THE RECORDED DOCUMENTS MUST BE PROVIDED TO THE HRW RIGHT-OF-WAY AGENT BEFORE THE UTILITY IMPROVEMENTS WITHIN THE SAID EASEMENT CAN BE PLACED INTO OPERATION. ANY AND ALL EASEMENTS THAT MUST BE OBTAINED FROM ADJOINING PROPERTY OWNERS MUST BE PROVIDED TO HRW BY THE DEVELOPER AT NO COST TO HARNETT COUNTY. THE FINAL INSPECTION OF ALL SANITARY SEWER SYSTEM IMPROVEMENTS CANNOT BE SCHEDULED WITH HRW UNTIL THE STREETS HAVE BEEN PAVED; THE RIGHTS-OF-WAY AND UTILITY EASEMENTS HAVE BEEN SEEDED AND STABILIZED WITH AN ADEQUATE STAND OF GRASS IN PLACE TO PREVENT EROSION ISSUES ON SITE.

AA. THE ENGINEER OF RECORD IS RESPONSIBLE TO ENSURE THAT CONSTRUCTION IS, AT ALL TIMES, IN COMPLIANCE WITH ACCEPTED SANITARY ENGINEERING PRACTICES AND APPROVED PLANS AND SPECIFICATIONS. NO FIELD CHANGES TO THE APPROVED PLANS ARE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL BY HRW. A COPY OF EACH ENGINEER'S FIELD REPORT IS TO BE SUBMITTED TO HRW AS EACH SUCH INSPECTION IS MADE ON SYSTEM IMPROVEMENTS OR TESTING IS PERFORMED BY THE CONTRACTOR. WATER AND SEWER INFRASTRUCTURE MUST PASS ALL TESTS REQUIRED BY HRW SPECIFICATIONS AND THOSE OF ALL APPLICABLE REGULATORY AGENCIES. THESE TESTS INCLUDE, BUT ARE NOT LIMITED TO: AIR TEST, VACUUM TEST, MANDREL TEST, VISUAL TEST, PRESSURE TEST, BACTERIOLOGICAL TEST, ETC. A HRW INSPECTOR MUST BE PRESENT DURING TESTING AND ALL TEST RESULTS SHALL BE SUBMITTED TO HRW. ALL TESTS MUST BE SATISFIED BEFORE THE FINAL INSPECTION WILL BE SCHEDULED WITH THE HRW INSPECTOR. THE ENGINEER OF RECORD MUST REQUEST IN WRITING TO SCHEDULE THE FINAL INSPECTION ONCE ALL CONSTRUCTION IS COMPLETE. THE DEVELOPER'S ENGINEER OF RECORD AND THE HRW UTILITY CONSTRUCTION INSPECTOR SHALL PREPARE A WRITTEN PUNCH LIST OF ANY DEFECTS OR DEFICIENCIES NOTED DURING THE FINAL INSPECTION, SHOULD ANY EXIST. UPON COMPLETION OF THE PUNCH LIST, THE DEVELOPER'S ENGINEER OF RECORD WILL SCHEDULE ANOTHER INSPECTION. IN THE EVENT THE NUMBER OF INSPECTIONS PERFORMED BY THE HRW EXCEEDS TWO, ADDITIONAL FEES MAY BE ASSESSED TO THE DEVELOPER.

ISSUED FOR CONSTRUCTION

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ERWIN, HARNETT COUNTY, NCDEQ, AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 048231 ENGINEER JACOB C. DOOLEY
06/09/2026

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| DATE | REVISION DESCRIPTION |
|---|---|
| 03/02/2026 | NCDOT ROADWAY EXHIBIT SUBMITTAL #1 |
| 03/20/2026 | NCDEQ, NCDOT, TOWN OF ERWIN, HRW RESUBMITTALS |
| 04/29/2026 | HRW RESUBMITTAL |
| 05/20/2026 | NCDOT SUBMITTAL |
| 06/09/2026 | HRW SUBMITTAL #4 |

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SCALE *AS SHOWN*

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TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA
UTILITY NOTES

JOB NO. *37630.232*

SHEET NO. *C0.1*

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## SURVEYOR'S CERTIFICATION

*FIRST AMERICAN TITLE INSURANCE COMPANY*
*COMMITMENT NO: NCS-1265088-CHAR*
*COMMITMENT DATE: JUNE 5, 2025 AT 8:00 A.M.*
*SCHEDULE B, PART II (EXCEPTIONS)*

*7. EASEMENTS AND ANY OTHER FACTS AS SHOWN ON PLAT RECORDED IN PLAT BOOK 2022, PAGE 473, HARNETT COUNTY REGISTRY.*
*SAID PLAT SHOWS A NC DOT R/W SITE ZONE EASEMENT. SAID EASEMENT DOES AFFECT THE SUBJECT PROPERTY AS SHOWN.*

*8. EASEMENTS AND ANY OTHER FACTS AS SHOWN ON PLAT RECORDED IN PLAT BOOK 2014, PAGE 87, HARNETT COUNTY REGISTRY. SAID PLAT SHOWS A NC DOT R/W SITE ZONE EASEMENT AND BUILDING SETBACK LINES. SAID EASEMENTS AND SETBACKS DO AFFECT THE SUBJECT PROPERTY AS SHOWN.*

*9. EASEMENTS AND ANY OTHER FACTS AS SHOWN ON PLAT RECORDED IN PLAT BOOK 7, PAGE 16, HARNETT COUNTY REGISTRY. SAID PLAT OFFERS NO ADDITIONAL INFORMATION THAT AFFECTS THE SUBJECT PROPERTY.*

*10. EASEMENT TO CAROLINA TELEPHONE & TELEGRAPH COMPANY RECORDED IN BOOK 604, PAGE 149, HARNETT COUNTY REGISTRY. SAID DOCUMENT DESCRIBES AN EASEMENT FOR AN TELEPHONE LINE. ALSO INCLUDES THE RIGHT OF ENTRY TO ACCESS SAID LINE AND THE RIGHT TO CLEAR ANY OBSTRUCTIONS THAT MIGHT INTERFERE WITH SAID LINE. UNABLE TO DETERMINE RELATIONSHIP TO SUBJECT PROPERTY. REFERENCES MADE TO OWNERSHIP NO LONGER EXIST; MAY AFFECT SUBJECT PROPERTY*

*11. EASEMENT TO CAROLINA TELEPHONE & TELEGRAPH COMPANY RECORDED IN BOOK 285, PAGE 149, HARNETT COUNTY REGISTRY. SAID DOCUMENT DESCRIBES AN EASEMENT FOR AN TELEPHONE LINE. ALSO INCLUDES THE RIGHT OF ENTRY TO ACCESS SAID LINE AND THE RIGHT TO CLEAR ANY OBSTRUCTIONS THAT MIGHT INTERFERE WITH SAID LINE. UNABLE TO DETERMINE RELATIONSHIP TO SUBJECT PROPERTY. REFERENCES MADE TO OWNERSHIP NO LONGER EXIST; MAY AFFECT SUBJECT PROPERTY*

*12. EASEMENT TO DUKE POWER RECORDED IN BOOK 297, PAGE 100; BOOK 350, PAGE 132; BOOK 351, PAGE 82; BOOK 351, PAGE 83; BOOK 351, PAGE 84; BOOK 351, PAGE 85; BOOK 402, PAGE 54; BOOK 425, PAGE 67; BOOK 568, PAGE 158; BOOK 754, PAGE 674; AND BOOK 754, PAGE 675, HARNETT COUNTY REGISTRY. SAID DOCUMENT DESCRIBES AN EASEMENT FOR AN ELECTRIC LINE. ALSO INCLUDES THE RIGHT OF ENTRY TO ACCESS SAID LINE AND THE RIGHT TO CLEAR ANY OBSTRUCTIONS THAT MIGHT INTERFERE WITH SAID LINE. SAID EASEMENT AND RIGHTS DO AFFECT THE SUBJECT PROPERTY AND ARE BLANKET IN NATURE; UNABLE TO PLOT.*

*13. TERMS, PROVISIONS, COVENANTS, CONDITIONS, EASEMENTS AND RESTRICTIONS AS PROVIDED IN DEED, RECORDED IN BOOK 352, PAGE 13, HARNETT COUNTY REGISTRY. SAID DOCUMENT DESCRIBES RESTRICTIONS ON USE AND DEVELOPMENT OF PROPERTY. SAID RESTRICTIONS DO AFFECT THE SUBJECT PROPERTY AND ARE BLANKET IN NATURE; UNABLE TO PLOT.*

*14. TERMS, PROVISIONS, COVENANTS, CONDITIONS, EASEMENTS AND RESTRICTIONS AS PROVIDED IN DEED, RECORDED IN BOOK 352, PAGE 17, HARNETT COUNTY REGISTRY. SAID DOCUMENT DESCRIBES RESTRICTIONS ON USE AND DEVELOPMENT OF PROPERTY. SAID RESTRICTIONS DO AFFECT THE SUBJECT PROPERTY AND ARE BLANKET IN NATURE; UNABLE TO PLOT.*

*15. TERMS, PROVISIONS, COVENANTS, CONDITIONS, EASEMENTS AND RESTRICTIONS AS PROVIDED IN DEED, RECORDED IN BOOK 352, PAGE 18, HARNETT COUNTY REGISTRY. SAID DOCUMENT DOES NOT AFFECT THE SUBJECT PROPERTY.*

## SURVEYOR'S CERTIFICATION

*ALL THAT TRACT OR PARCEL OF LAND LYING IN AND BEING IN THE DUKE TOWNSHIP, HARNETT COUNTY, NORTH CAROLINA AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:*

*COMMENCING AT A POINT ON THE INTERSECTION OF THE NORTHWESTERLY RIGHT OF WAY OF GILBERT STREET (HAVING A 25-FOOT, PUBLICLY DEDICATED RIGHT OF WAY) AND THE NORTHEASTERLY RIGHT OF WAY OF U.S. HIGHWAY 421 (HAVING A VARIABLE WIDTH, PUBLICLY DEDICATED RIGHT OF WAY), THENCE LEAVING SAID RIGHT OF WAY OF GILBERT STREET AND CONTINUING ALONG SAID RIGHT OF WAY OF U.S. HIGHWAY 421 NORTH 51 DEGREES 29 MINUTES 04 SECONDS WEST A DISTANCE OF 99.98 FEET TO A 1/2-INCH REBAR FOUND, SAID 1/2-INCH REBAR BEING THE TRUE POINT OF BEGINNING.*

*THENCE CONTINUING ALONG SAID RIGHT OF WAY NORTH 52 DEGREES 22 MINUTES 47 SECONDS WEST A DISTANCE OF 274.67 FEET TO A CONCRETE MONUMENT FOUND AT THE INTERSECTION OF U.S. HIGHWAY 421 AND STATE HIGHWAY 55; THENCE CONTINUING ALONG SAID INTERSECTION THE FOLLOWING COURSES AND DISTANCES: NORTH 25 DEGREES 15 MINUTES 08 SECONDS WEST A DISTANCE OF 144.31 FEET TO A 1/2-INCH REBAR FOUND; NORTH 01 DEGREES 12 MINUTES 24 SECONDS EAST A DISTANCE OF 125.40 FEET TO A 1/2-INCH REBAR FOUND; THENCE LEAVING SAID INTERSECTION AND CONTINUING ALONG SAID RIGHT OF WAY OF STATE HIGHWAY 55 NORTH 24 DEGREES 16 MINUTES 16 SECONDS EAST A DISTANCE OF 174.88 FEET TO A 1-INCH OPEN-TOP PIPE FOUND; THENCE LEAVING SAID RIGHT OF WAY OF STATE HIGHWAY 55 SOUTH 57 DEGREES 13 MINUTES 49 SECONDS EAST A DISTANCE OF 170.28 FEET TO A 1/2-INCH OPEN-TOP PIPE FOUND; THENCE SOUTH 57 DEGREES 16 MINUTES 51 SECONDS EAST A DISTANCE OF 249.83 FEET TO A 1/2-INCH REBAR FOUND; THENCE NORTH 33 DEGREES 06 MINUTES 53 SECONDS EAST A DISTANCE OF 119.78 FEET TO A 1/2-INCH REBAR FOUND ON THE SOUTHWESTERLY RIGHT OF WAY OF BARNES DRIVE (HAVING A 50-FOOT, PUBLICLY DEDICATED RIGHT OF WAY); THENCE CONTINUING ALONG SAID RIGHT OF WAY SOUTH 60 DEGREES 52 MINUTES 48 SECONDS EAST A DISTANCE OF 100.88 FEET TO A 1-INCH OPEN-TOP PIPE FOUND; THENCE LEAVING SAID RIGHT OF WAY SOUTH 33 DEGREES 26 MINUTES 18 SECONDS WEST A DISTANCE OF 126.08 FEET TO A 1/2-INCH REBAR FOUND; THENCE SOUTH 57 DEGREES 20 MINUTES 53 SECONDS EAST A DISTANCE OF 71.25 FEET TO A SIGN POST FOUND; THENCE SOUTH 55 DEGREES 15 MINUTES 21 SECONDS WEST A DISTANCE OF 303.71 FEET TO A 1-INCH CRIMPED TOP PIPE FOUND; THENCE SOUTH 25 DEGREES 37 MINUTES 33 SECONDS WEST A DISTANCE OF 100.11 FEET TO A 1/2-INCH REBAR FOUND, SAID 1/2-INCH REBAR BEING THE TRUE POINT OF BEGINNING.*

*SAID TRACT OF LAND CONTAINS 4.161 ACRES (181,247 SQUARE FEET).*

## SURVEYOR'S CERTIFICATION

*I, MITCHELL LOWERY, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTION RECORDED IN BOOK 4160, PAGE 107, HARNETT COUNTY, NC RECORDS); THAT THE RATIO OF PRECISION OR POSITIONAL ACCURACY AS CALCULATED IS 1':37,594'; THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, LICENSE NUMBER AND SEAL THIS 28TH DAY OF JULY, A.D., 2025.*

*TO CIRCLE K STORES INC AND FIRST AMERICAN TITLE INSURANCE COMPANY:*

*THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 5, 6(A), 6(B), 8, 11, 13, 14, 17, 18 AND 19 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON JULY 15, 2025.*

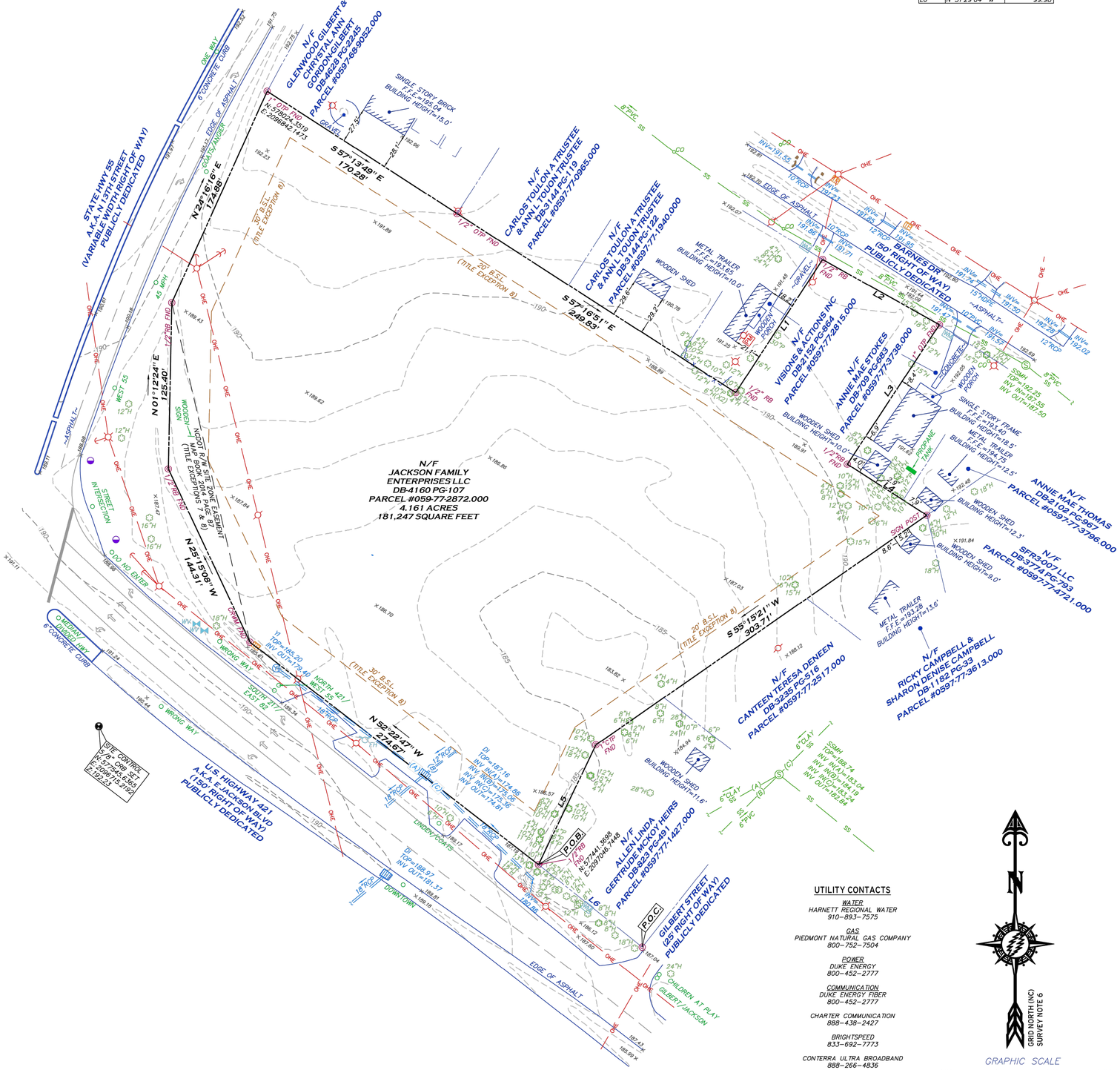
NORTH CAROLINA PROFESSIONAL SEAL L-4801 LAND SURVEYOR MITCHELL E. LOWERY

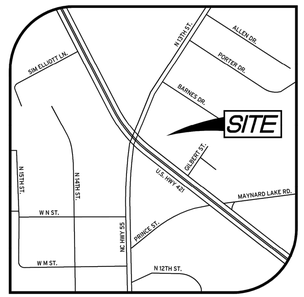
*MITCHELL LOWERY NORTH CAROLINA PLS# L-4801*

*DATE OF PLAT OR MAP: JULY 28, 2025*

### LINE TABLE

| LINE | BEARING | DISTANCE |
|---|---|---|
| L1 | N 33°06'53" E | 119.78 |
| L2 | S 60°52'48" E | 100.88 |
| L3 | S 33°26'18" W | 126.08 |
| L4 | S 57°20'53" E | 71.25 |
| L5 | S 25°37'33" W | 100.11 |
| L6 | N 51°29'04" W | 99.98 |




VICINITY MAP

## SURVEY NOTES

*1) PROPERTY SHOWN HEREON WAS SURVEYED JULY 15, 2025.*

*2) THE FIELD DATA UPON WHICH THIS PLAT IS BASED HAS A CLOSURE OF 1' IN 37,594' WITH AN ANGULAR ERROR OF 3.61 SECONDS PER ANGLE POINT AND WAS ADJUSTED USING THE LEAST SQUARES METHOD.*

*3) A SOKKIA IX TOTAL STATION, CARLSON BRX7 GPS RECEIVER, AND CARLSON SURVEYOR+ DATA COLLECTOR WERE USED FOR FIELD SURVEY MEASUREMENTS.*

*4) THIS PLAT HAS A MAP CLOSURE OF 1' IN 541,183'.*

*5) SAID DESCRIBED PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION X ON FLOOD INSURANCE RATE MAP NO. 3720059700J, WITH A DATE OF IDENTIFICATION OF OCTOBER 3, 2006 FOR COMMUNITY NUMBER 370456, IN HARNETT COUNTY, STATE OF NORTH CAROLINA, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PROPERTY IS SITUATED.*

*6) BEARING BASIS (NAD83(2011), NC) AND VERTICAL DATUM (NAVD88, GEOID18) FOR THIS SURVEY WERE ESTABLISHED USING A CARLSON BRX7 GPS RECEIVER UTILIZING OPUS-S FOR POST PROCESSING. THE RELATIVE POSITIONAL ACCURACY, AS CALCULATED ACCORDING TO THE FEDERAL GEOGRAPHIC DATA COMMITTEE PART 3: NATIONAL STANDARD FOR SPATIAL DATA ACCURACY, IS .03 FEET HORIZONTAL AND .05 FEET VERTICAL AT THE 95% CONFIDENCE LEVEL.*

*7) UTILITIES SHOWN PER MARKINGS PLACED BY NC 811, TICKET NO:A251765445. UTILITIES OTHER THAN THOSE SHOWN HEREON MAY EXIST. PROFESSIONAL LAND SURVEYORS MAKES NO GUARANTEE AS TO THE EXISTENCE OR NON-EXISTENCE OF SAID UTILITIES.*

*8) NO OBSERVED EVIDENCE OF CEMETERIES, GRAVESITES, AND/OR BURIAL GROUNDS AT TIME OF SURVEY.*

*9) PROPERTY SHOWN HEREON LIES WITHIN THE RECORD DESCRIPTION AS STATED IN GENERAL WARRANTY DEED RECORDED IN DEED BOOK 4160, PAGE 107, HARNETT COUNTY RECORDS.*

*10) THIS DESCRIBES THE SAME PROPERTY AS DESCRIBED IN FIRST AMERICAN TITLE INSURANCE COMPANY COMMITMENT NO:NCS-1265088-CHAR, DATED JUNE 5, 2025 AT 8:00 A.M.*

*11) NO ENCROACHMENTS OTHER THAN THOSE SHOWN HEREON WERE OBSERVABLE AT TIME OF SURVEY.*

*12) AT THE TIME OF THE SURVEY, THERE WAS NO OBSERVABLE EVIDENCE OF EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS.*

*13) AT THE TIME OF THE SURVEY THERE WERE NO PROPOSED CHANGES IN STREET RIGHT OF WAY LINES OR OBSERVABLE EVIDENCE OF STREET OR SIDEWALK REPAIRS.*

*14) AT THE TIME OF THE SURVEY, THERE WAS NO OBSERVABLE EVIDENCE OF THE SITE BEING USED AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL.*

*15) SUBJECT PROPERTY HAS DIRECT ACCESS TO U.S. HIGHWAY 421 AND STATE HIGHWAY 55, BOTH HAVING PUBLICLY DEDICATED RIGHTS OF WAY.*

*16) SUBJECT PROPERTY IS CONTIGUOUS TO ALL ADJACENT PROPERTIES AND RIGHTS OF WAY. NO GAPS, GORES, OR OVERLAPS ARE KNOWN TO EXISTS.*

## ZONING

*PER ITEMS 6(A) AND 6(B) OF THE 2021 ALTA/NSPS LAND TITLE SURVEY MINIMUM STANDARD DETAIL REQUIREMENTS, SETBACKS AND OTHER ZONING RESTRICTIONS/REQUIREMENTS CANNOT BE LISTED UNLESS A ZONING REPORT OR LETTER STATING SAID RESTRICTIONS/REQUIREMENTS IS PROVIDED.*

## UTILITY CONTACTS

*WATER*
*HARNETT REGIONAL WATER*
*910-893-7575*

*GAS*
*PIEDMONT NATURAL GAS COMPANY*
*800-752-7504*

*POWER*
*DUKE ENERGY*
*800-452-2777*

*COMMUNICATION*
*DUKE ENERGY FIBER*
*800-452-2777*

*CHARTER COMMUNICATION*
*888-438-2427*

*BRIGHTSPEED*
*833-692-7773*

*CONTERRA ULTRA BROADBAND*
*888-266-4836*

*NC DEPT OF TRANSPORTATION*
*877-368-4968*

*RIPPLE FIBER*
*800-359-5767*

GRID NORTH (NC) SURVEY NOTE 6

GRAPHIC SCALE
40' 0 40' 80'
1 Inch = 40 Feet

## LEGEND

| | |
|---|---|
| | PROPERTY LINE |
| | OVERHANG/AWNING |
| (BEARING/DISTANCE) | RECORD CALLS |
| B.S.L. | BUILDING SETBACK LINE |
| B.S.L. | BUILDING SETBACK LINE |
| | INDEX CONTOUR |
| | MINOR CONTOUR |
| × | SPOT ELEVATION |
| W | WATER LINE |
| OHE | OVERHEAD UTILITY LINE |
| G | GAS LINE |
| SS | SANITARY SEWER LINE |
| UGE | UNDERGROUND ELECTRIC LINE |
| X X | FENCE LINE |
| | STORM DRAIN PIPE |
| WV | WATER VALVE |
| WM | WATER METER |
| FH | FIRE HYDRANT |
| PM | POWER METER |
| TP | TELEPHONE PEDESTAL |
| S | SANITARY SEWER MANHOLE |
| DI | DROP INLET |
| JB | JUNCTION BOX |
| RB | REBAR |
| CRB | CAPPED REBAR |
| CRM | CONCRETE R/W MONUMENT |
| OTP | OPEN TOP PIPE |
| FND | FOUND |
| | LIGHT POLE |
| | SIGNAL POLE |
| | SIGN |
| H | HARDWOOD TREE |
| P | PINE TREE |


PROFESSIONAL
LAND SURVEYORS, PLLC
317 GRASSDALE ROAD
CARTERSVILLE, GA 30121
770-334-8186
WWW.PLS.US
INFO@PLS.US
NORTH CAROLINA C.O.A.: P-2630


PREPARED FOR:
CIRCLE K STORES INC
& FIRST AMERICAN TITLE INSURANCE COMPANY

ALTA/NSPS LAND TITLE SURVEY OF:
PARCEL #0597-77-2872.000
ERWIN, NC 28339

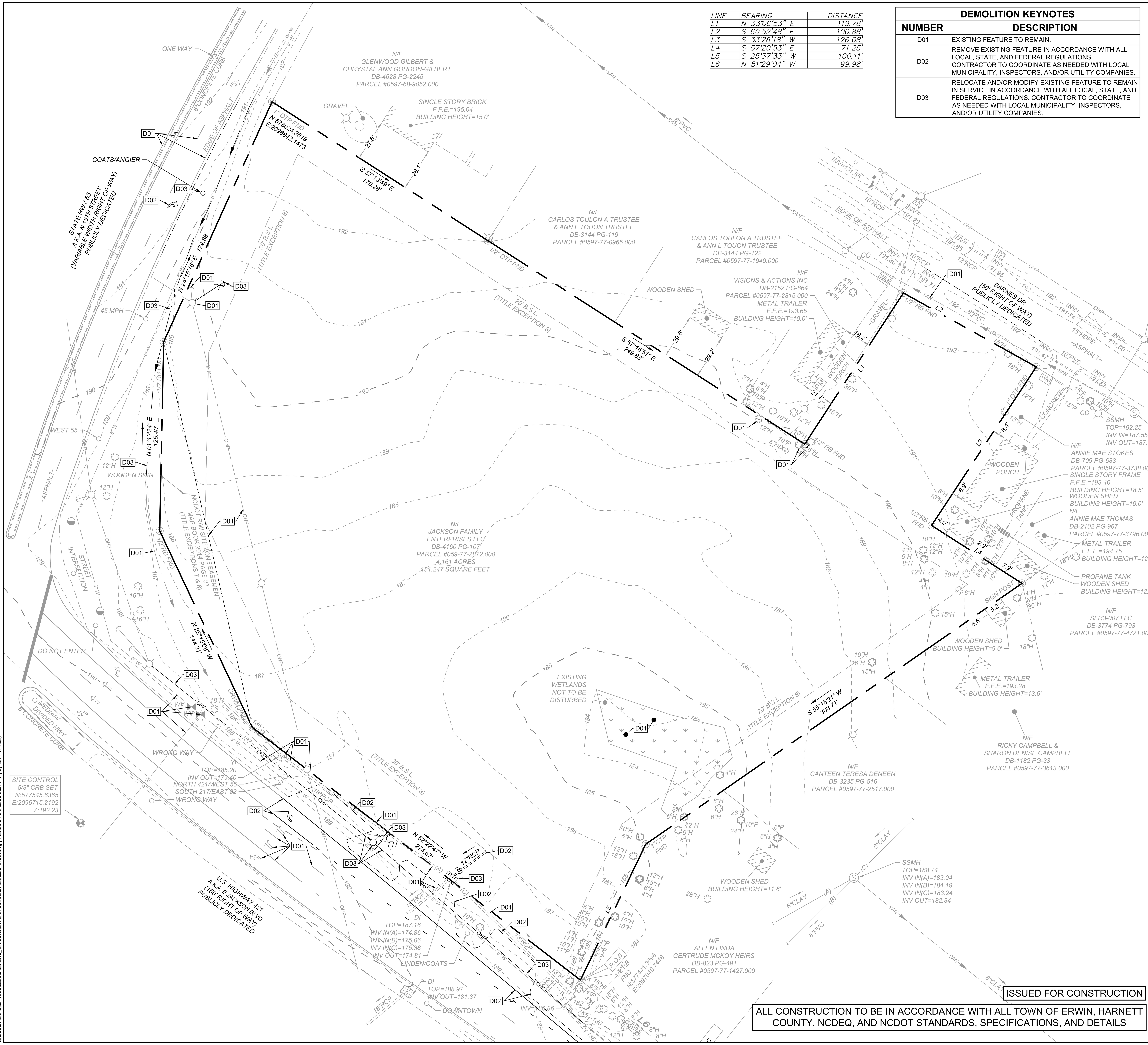
COUNTY: HARNETT
STATE: NORTH CAROLINA
TOWNSHIP: DUKE

REVISIONS

| DATE: | DESCRIPTION |
|---|---|

PROFESSIONAL LAND SURVEYORS

DATE: JULY 28, 2025
JOB #: 255317
SCALE: 1"=40'
DRAWN BY: D. HALL




| LINE | BEARING | DISTANCE |
|---|---|---|
| L1 | N 33°06'53" E | 119.78' |
| L2 | S 60°52'48" E | 100.88' |
| L3 | S 33°26'18" W | 126.08' |
| L4 | S 57°20'53" E | 71.25' |
| L5 | S 25°37'33" W | 100.11' |
| L6 | N 51°29'04" W | 99.98' |

## DEMOLITION KEYNOTES

| NUMBER | DESCRIPTION |
|---|---|
| D01 | EXISTING FEATURE TO REMAIN. |
| D02 | REMOVE EXISTING FEATURE IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS. CONTRACTOR TO COORDINATE AS NEEDED WITH LOCAL MUNICIPALITY, INSPECTORS, AND/OR UTILITY COMPANIES. |
| D03 | RELOCATE AND/OR MODIFY EXISTING FEATURE TO REMAIN IN SERVICE IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS. CONTRACTOR TO COORDINATE AS NEEDED WITH LOCAL MUNICIPALITY, INSPECTORS, AND/OR UTILITY COMPANIES. |

ISSUED FOR CONSTRUCTION

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ERWIN, HARNETT COUNTY, NCDEQ, AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

## SURVEY NOTES

1. ON SITE BOUNDARY, TOPOGRAPHY AND PLANIMETRIC INFORMATION IS TAKEN FROM A SURVEY BY PROFESSIONAL LAND SURVEYORS, PLLC DATED JULY 28, 2025. OFFSITE TOPOGRAPHY AND PLANIMETRIC INFORMATION FROM OTHER SOURCES AND HAS NOT BEEN FIELD VERIFIED BY TIMMONS GROUP.
2. ALL DISTANCES SHOWN ON SURVEY ARE HORIZONTAL GROUND DISTANCES UNLESS OTHERWISE NOTED.
3. THIS SURVEY DOES NOT REPRESENT A TITLE SEARCH BY THIS FIRM.
4. BASIS OF BEARING SHOWN HEREON IS NC GRID NAD 83 (NSRS 2007).
5. VERTICAL DATUM SHOWN HEREON IS NAVD88.
6. OTHER SOURCES OF INFORMATION INCLUDE WETLAND DELINEATION BY TIMMONS GROUP DATED 07/07/2025.
7. NOT LOCATED IN FLOOD HAZARD AREA PER FEMA MAP #3720059700J (EFFECTIVE 10/03/2006).
8. RECORDED PROPERTY DATA:
   8.1. DB 4160 PG 107
9. EXISTING IMPERVIOUS AREA = 0.00 ACRES
10. THE UTILITIES ON THESE PLANS ARE APPROXIMATE ONLY, AND ARE NOT ACCURATE FOR CONSTRUCTION PURPOSES. FOR FIELD MARKS CALL 1-800-632-4949.
11. WETLANDS DELINEATED BY TIMMONS GROUP AND CONFIRMED ON 08/20/2025. CONFIRMATION #: SAW=2025-01459.

### LEGEND

IPF - IRON PIPE FOUND
IRF - IRON ROD FOUND
IPS - IRON PIPE SET
PT - CALCULATED POINT
CM - CONCRETE MONUMENT
FIRE HYDRANT
ELECTRIC BOX
TELEPHONE PEDESTAL
CABLE TV PEDESTAL
POWER POLE < GUY
LIGHT POLE
YARD LIGHT
WELL
R / W - RIGHT-OF-WAY
P / L - PROPERTY LINE
C / L - CENTERLINE
NTS - NOT TO SCALE
GV - GAS VALVE
CB - CATCH BASIN
GI - GRATE INLET
YI - YARD INLET
CI - CURB INLET
EP - EDGE OF PAVING
TBC - TOP BACK OF CURB
DB - DEED BOOK
PB - PLAT BOOK
PG - PAGE
SF - SQUARE FEET
FLAG POLE

BOLLARD
MH DRAINAGE
MH SANITARY
MH ELECTRIC
MH TELEPHONE
MH WATER
SPRINKLER BOX
ELECTRIC METER
CLEAN OUT
WATER METER
WATER VALVE
ROOF DRAIN

SIGN
FO FIBER OPTIC MARKER
SPRINKLER HEAD
SPRINKLER VALVE
GAS METER
GAS VALVE
GROUND LAMP
BOREHOLE
AC UNIT
TV TELEPHONE VAULT
MAILBOX

DEED LINE
LINE NOT SURVEYED
STORM LINE
SAN SANITARY LINE
X FENCE
OHP OVERHEAD POWER LINE
G PAINTED GAS LINE
UGP PAINTED POWER LINE
STM PAINTED STORM LINE
UGT PAINTED TELEPHONE LINE
W PAINTED WATER LINE
EDGE OF UNDERBRUSH

RCP - REINFORCED CONCRETE PIPE
CMP - CORRUGATED METAL PIPE
VCP - VITRIFIED CLAY PIPE
DIP - DUCTILE IRON PIPE
HDPE - HIGH DENSITY POLYETHYLENE PIPE
HVAC - HEATING, VENTILATION AND AIR CONDITIONING

## DEMOLITION NOTES

1. ALL UTILITIES OR STRUCTURES NOT INDICATED FOR REMOVAL OR MODIFICATION ARE TO REMAIN AND BE PROTECTED FROM DAMAGE.
2. CONTRACTOR TO OBTAIN, REFERENCE, AND UTILIZE ALL AVAILABLE ENVIRONMENTAL REPORTS (PHASE 1 ESA, ASBESTOS, ETC.) FROM DEVELOPER.
3. ALL WASTE MATERIAL GENERATED FROM CLEARING AND DEMOLITION ACTIVITIES SHALL BE DISPOSED OF OFF-SITE IN ACCORDANCE WITH ALL APPLICABLE RULES AND REGULATIONS.
4. REMOVE/ DEMOLISH/ ABANDON AFTER EROSION CONTROL MEASURES ARE IN PLACE AN APPROVAL OF THE INSPECTOR. REFER TO EROSION CONTROL PLAN.
5. REMOVE TOPSOIL AND STOCKPILE APPROPRIATELY ON-SITE. ON-SITE TEMPORARY STOCKPILES SHALL BE LOCATED WITHIN CONSTRUCTION LIMITS.
6. DO NOT INTERRUPT EXISTING UTILITIES SERVICING FACILITIES OCCUPIED BY THE OWNER OR OTHERS EXCEPT WHEN PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY AFTER ARRANGING TO PROVIDE ACCEPTABLE TEMPORARY UTILITY SERVICES. (1) NOTIFY OWNER NOT LESS THAN ONE WEEK IN ADVANCE OF PROPOSED UTILITY INTERRUPTIONS. (2) DO NOT PROCEED WITH UTILITY INTERRUPTIONS WITHOUT RECEIVING OWNER WRITTEN PERMISSION. (3) COORDINATE ALL UTILITY RELOCATION WITH APPROPRIATE UTILITY PROVIDER.
7. ALL PAVEMENT OR CONCRETE TO BE REMOVED SHALL BE SAW CUT TO PROVIDE A STRAIGHT AND UNIFORM JOINT WITH NEW CONSTRUCTION. ANY EXISTING PAVEMENT, SIDEWALK, CURB & GUTTER, ETC. THAT MUST BE REMOVED TO ALLOW NEW CONSTRUCTION SHALL BE REMOVED TO ALLOW NEW CONSTRUCTION SHALL BE REMOVED AND REPAIRED PER THE SPECIFICATIONS AND DETAILS OR TO MATCH EXISTING CONDITIONS (WHETHER OR NOT SHOWN ON THE DRAWINGS TO BE REMOVED). UTILITY INSTALLATIONS MAY UTILIZE OPEN CUT OF PAVEMENTS UNLESS INDICATED OTHERWISE. TRENCH IN EXISTING ASPHALT SHALL BE PATCHED PER PAVEMENT REPAIR DETAIL.
8. PROTECT ALL ADJACENT PROPERTIES, THE GENERAL PUBLIC AND ALL OF THE OWNER'S FACILITIES. SHOULD DAMAGE OCCUR, NOTIFY ENGINEER IMMEDIATELY.
9. SUBSURFACE FEATURES ARE SHOWN IN APPROXIMATE LOCATION. CONTRACTOR IS RESPONSIBLE FOR SUBSURFACE UTILITY EXPLORATION TO DETERMINE UTILITY LOCATIONS AND DEPTHS.
10. THE CONTRACTOR SHALL USE NC ONE CALL (811) TO LOCATE ALL UNDERGROUND UTILITIES.
11. CONTRACTOR TO VERIFY LOCATIONS AND SIZES OF ALL EXISTING FEATURES PRIOR TO COMMENCEMENT OF CONSTRUCTION. REPAIR AND REPLACE ANY DAMAGES TO EXISTING UTILITIES RESULTING FROM CONSTRUCTION.
12. CONTRACTOR IS RESPONSIBLE FOR REMOVING OR ABANDONING ALL EXISTING UTILITIES REQUIRED TO COMPLETE SITE CONSTRUCTION, EITHER ONSITE OR IN PUBLIC ROW, IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
13. WATER AND SEWER ABANDONMENT SHALL BE DONE IN ACCORDANCE WITH HARNETT REGIONAL WATER AND NCDOT STANDARDS INCLUDING DISCONNECT FROM THE MAIN AND REMOVAL OF SERVICES FROM THE RIGHT-OF-WAY.
14. ANY EXISTING UNIDENTIFIED SEPTIC SYSTEMS AND WELLS FOUND ON SITE SHALL BE REMOVED OR ABANDONED IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS AT NO CHARGE TO THE OWNER
15. VERIFY ALL ILLUSTRATED KNOWN UNDERGROUND ELEMENTS. EXERCISE REASONABLE EFFORTS TO PROTECT ANY UNKNOWN UNDERGROUND ELEMENTS. NOTIFY THE ENGINEER IMMEDIATELY IF UNKNOWN ELEMENTS ARE DISCOVERED THAT WOULD NECESSITATE MODIFICATION TO THE PROPOSED DESIGN.
16. CONTRACTOR SHALL COORDINATE ALL CONNECTIONS, RELOCATION AND DEMOLITION WORK WITH THE APPROPRIATE COMPANY OR JURISDICTION HAVING AUTHORITY AND SHALL OBTAIN ANY PERMITS AS REQUIRED.
17. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, AND OSHA REGULATIONS.
18. EXISTING MANHOLES, VALVE BOXES, VAULTS, CLEANOUTS, UTILITY POLES ETC. TO REMAIN WITHIN THE GRADING LIMITS SHALL BE ADJUSTED AS NEEDED TO FUNCTION PROPERLY WITH THE PROPOSED FINISHED GRADES (WHETHER OR NOT INDICATED TO BE MODIFIED).
19. GENERAL CONTRACTOR TO COORDINATE ALL PEDESTRIAN ACCESS PATHS, LOCATIONS, LIGHTING ETC. WITH THE DEVELOPER.
20. CONTRACTOR SHALL NOTIFY APPROPRIATE DEPARTMENTS PRIOR TO BEGINNING ANY WORK WITHIN PUBLIC RIGHT-OF-WAY.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 048231 JACOB C. DOOLEY
06/09/2026

THIS DRAWING PREPARED AT THE
**RALEIGH OFFICE**
5410 Trinity Road, Suite 102 | Raleigh, NC 27607
TEL 919.866.4951 FAX 919.833.8124 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

| DATE | REVISION DESCRIPTION |
|---|---|
| 03/02/2026 | NCDOT ROADWAY EXHIBIT SUBMITTAL #1 |
| 03/20/2026 | NCDEQ, NCDOT, TOWN OF ERWIN, HRW RESUBMITTALS |
| 04/29/2026 | HRW RESUBMITTAL |
| 05/20/2026 | NCDOT SUBMITTAL |
| 06/09/2026 | HRW SUBMITTAL #4 |

| | |
|---|---|
| DATE | 12/17/2025 |
| DRAWN BY | 332 |
| DESIGNED BY | J. DOOLEY |
| CHECKED BY | J. DOOLEY |
| SCALE | AS SHOWN |

# TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

# CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC

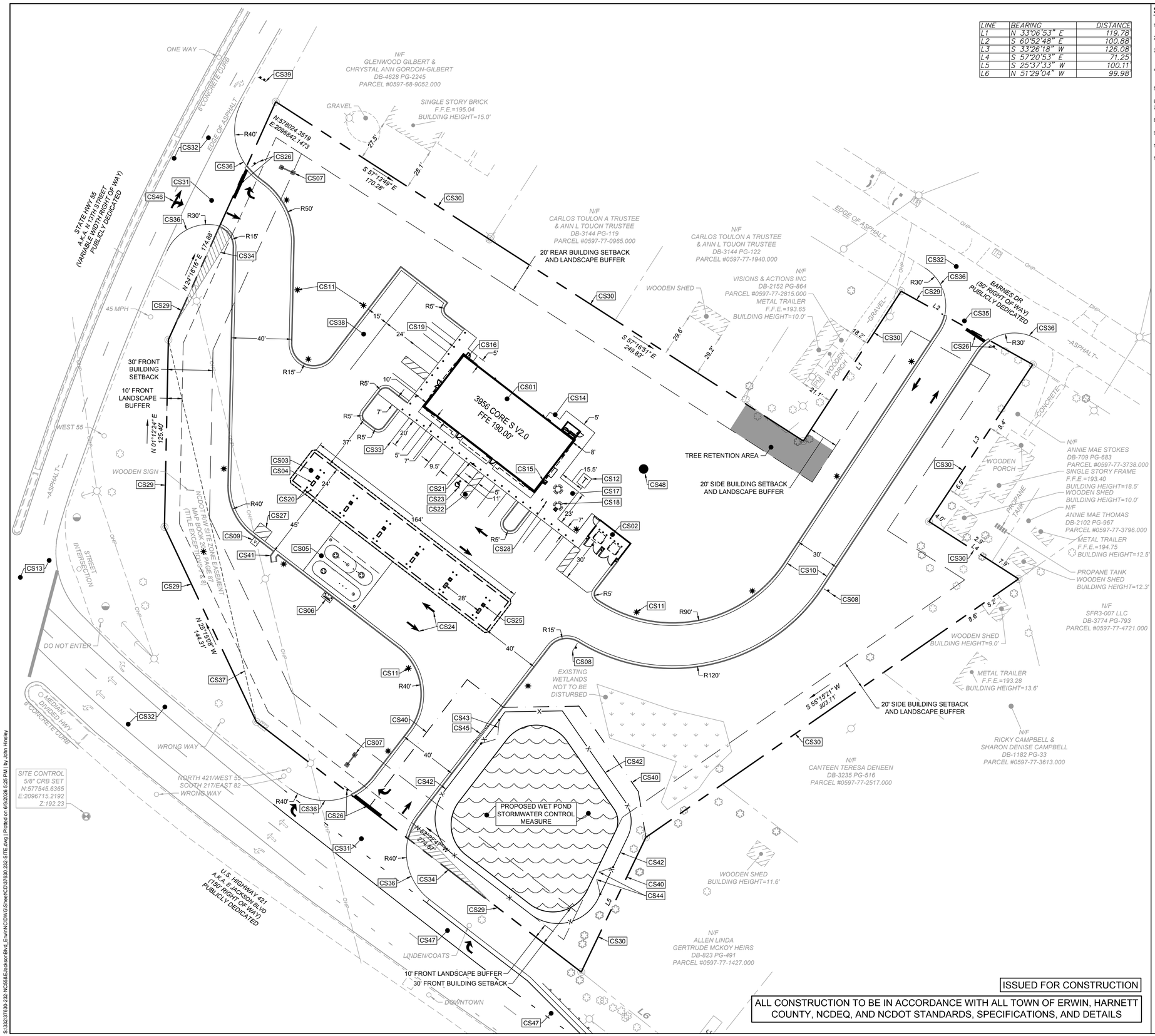
TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA

## EXISTING CONDITIONS AND DEMOLITION PLAN

| | |
|---|---|
| JOB NO. | 37630.232 |
| SHEET NO. | C1.0 |

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## SITE LAYOUT NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWN OF ERWIN, HARNETT COUNTY AND NCDOT STANDARDS AND SPECIFICATIONS.
2. ALL DIMENSIONS ARE TO FACE OF CURB, EDGE OF PAVING, BUILDING WALL FACE OR PROPERTY LINE UNLESS OTHERWISE NOTED.
3. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, UTILITIES AND GRADES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY EXISTING DISCREPANCIES PRIOR TO COMMENCING ANY RELATED CONSTRUCTION.
4. AT LEAST 3-12 BUSINESS DAYS PRIOR TO CONSTRUCTION OR EXCAVATION THE CONTRACTOR SHALL NOTIFY "NORTH CAROLINA ONE CALL" (811) OR (1-800-632-4949) TO HAVE EXISTING UTILITIES LOCATED.
5. PARKING SPACES ARE 9.5' WIDE X 20' LONG MINIMUM EXCEPT HANDICAP SPACE WHICH IS 11.0' WIDE WITH A 5.0' STANDARD ACCESS AISLE.
6. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS OF THE BUILDING.
7. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DIMENSIONAL CONFLICTS PRIOR TO THE BEGINNING OF CONSTRUCTION.
8. ALL CURB AND GUTTER ONSITE SHALL BE 24" WIDE. NO CURB AND GUTTER IS PROPOSED WITHIN THE RIGHT OF WAY.
9. ALL DISTURBED CURB & GUTTER AND ASPHALT SHALL BE REPLACED PER TOWN OF ERWIN, HARNETT COUNTY OR NCDOT STANDARDS AND SPECIFICATIONS.
10. ALL DRIVEWAY DESIGN AND CONSTRUCTION MUST COMPLY WITH NCDOT. DRIVEWAYS SHALL BE PERMITTED SEPARATELY.
11. NO SIGHT OBSTRUCTING OR PARTIALLY OBSTRUCTING WALL, FENCE, FOLIAGE, BERMING, PARKED VEHICLES OR SIGN BETWEEN THE HEIGHTS OF TWENTY-FOUR (24) INCHES AND EIGHT (8) FEET ABOVE THE CURB LINE ELEVATION, OR THE NEAREST TRAVELED WAY IF NO CURBING EXISTS, SHALL BE PLACED WITHIN A SIGHT TRIANGLE OF A PUBLIC STREET, PRIVATE STREET OR DRIVEWAY CONTAINED EITHER ON THE PROPERTY OR ON AN ADJOINING PROPERTY.

| LINE | BEARING | DISTANCE |
|---|---|---|
| L1 | N 33°06'53" E | 119.78' |
| L2 | S 60°52'48" E | 100.88' |
| L3 | S 33°26'18" W | 126.08' |
| L4 | S 57°20'53" E | 71.25' |
| L5 | S 25°37'33" W | 100.11' |
| L6 | N 51°29'04" W | 99.98' |

## SITE LAYOUT KEYNOTES

| NUMBER | DESCRIPTION |
|---|---|
| CS01 | C-STORE BUILDING, REFER TO ARCHITECTURAL AND MEP PLANS BY OTHERS. |
| CS02 | TRASH ENCLOSURE AND BOLLARDS. AREA TO BE SCREENED FROM VIEW WITH A SIMILAR MATERIAL AS THE BUILDING FACADE. REFER TO ARCHITECTURAL PLANS BY OTHERS. |
| CS03 | GAS CANOPY; REFER TO CANOPY PLANS BY OTHERS. |
| CS04 | MPD; REFER TO DETAIL CK-200 (TYP.). |
| CS05 | UST TANKS AND PAD; REFER TO FUELING PLANS BY OTHERS FOR PAD SIZING AND PAVING DESIGN. |
| CS06 | UST VENT STACK; REFER TO FUELING PLANS BY OTHERS. |
| CS07 | MONUMENT SIGN; FURNISHED AND INSTALLED BY OTHERS. VERIFY EXACT LOCATION AND DESIGN BEFORE ROUGH-IN. PERMITTED BY OTHERS. |
| CS08 | "NO TRUCKS" SIGNAGE. |
| CS09 | AIR MACHINE; PROVIDE CONCRETE PAD. REFER TO DETAIL CK-160 FOR PAD DIMENSIONS. |
| CS10 | 24" CURB & GUTTER; REFER TO DETAIL CK-120 AND CK-125. |
| CS11 | LIGHT POLE BASE (TYPICAL - PER LIGHTING PLAN); REFER TO ARCHITECTURAL PLANS BY OTHERS. |
| CS12 | ELECTRIC TRANSFORMER PAD; GC TO COORDINATE LOCATION WITH LOCAL PROVIDER. LOCAL PROVIDER CAN SUPERSEDE THE PROPOSED TRANSFORMER PAD LOCATION. |
| CS13 | EXISTING SIGNALIZED INTERSECTION. |
| CS14 | ROOF LADDER PAD; STANDARD DUTY CONCRETE |
| CS15 | CO2 TANK AND STORAGE CABINET; 4'x4' STANDARD DUTY CONCRETE PAD IF LOCATED IN LANDSCAPE AREA. |
| CS16 | BUILDING SERVICE ENTRANCE SECTION |
| CS17 | OUTDOOR SEATING AREA; REFER TO PLAN FOR CONCRETE PAD DIMENSIONS. |
| CS18 | TWO (2) OUTDOOR SEATING TABLES. ONE (1) U-LINE H-2126R SQUARE STANDARD & ONE (1) U-LINE 2671R SQUARE ADA. |
| CS19 | 4" BOLLARD AND COVER, REFER TO DETAIL CK-180 (TYP.). CENTER ON ADA STRIPING. 6' ON CENTER SPACING. REFER TO PLAN FOR COUNT. |
| CS20 | 6" BOLLARD AND COVER, REFER TO DETAIL CK-180 AND FUELING PLANS FOR LOCATION AND COUNT (TYP.). |
| CS21 | VAN ACCESSIBLE PARKING SIGN (TYPICAL - PER ADA AND LOCAL REQUIREMENTS) R7-8A (MUTCD) MOUNTED IN A BOLLARD; REFER TO DETAIL CK-185. |
| CS22 | ADA ACCESSIBLE AISLE AND STRIPING, PER ADA AND LOCAL CODES; REFER TO DETAIL CK-105. |
| CS23 | ADA ACCESSIBLE PARKING SPACE AND SYMBOL STRIPING; REFER TO DETAIL CK-105 AND CK-110. PER ADA AND LOCAL CODES. |
| CS24 | DIRECTIONAL TRAFFIC ARROW (PER LOCAL CODES); REFER TO DETAIL CK-115 (TYP.). |
| CS25 | CANOPY COLUMN (TYP.); REFER TO CANOPY PLANS BY OTHERS. |
| CS26 | 30"x30" R1-1 "STOP" SIGN AND 24" WIDE "STOP" BAR. |
| CS27 | AIR MACHINE PAVEMENT MARKING |
| CS28 | BICYCLE RACK; REFER TO DETAIL CK-198 OR LOCAL REQUIREMENT. |
| CS29 | RIGHT-OF-WAY (TYP.) |
| CS30 | PROPERTY BOUNDARY (TYP.) |
| CS31 | RIGHT IN / RIGHT OUT DRIVEWAY |
| CS32 | EXISTING PAVEMENT TO REMAIN |
| CS33 | PARKING STALL STRIPING PER LOCAL CODES (TYP.) |
| CS34 | 10' X 70' SIGHT DISTANCE TRIANGLE (TYP.) |
| CS35 | FULL ACCESS DRIVEWAY |
| CS36 | EDGE OF ASPHALT (TYP.) |
| CS37 | EXISTING NCDOT R/W SITE ZONE EASEMENT |
| CS38 | 75' X 15' LOADING SPACE |
| CS39 | RELOCATED COATS/ANGIER HIGHWAY SIGN |
| CS40 | VARIABLE WIDTH PRIVATE DRAINAGE AND SCM ACCESS / MAINTENANCE EASEMENT |
| CS41 | 3' WIDE CONCRETE FLUME |
| CS42 | 6' TALL BLACK METAL FENCE. REFER TO DETAIL CK-325. |
| CS43 | 20' GATE OVER ENTRANCE AND PROPOSED STORM PIPE. |
| CS44 | 20' GATE ON CENTER WITH PROPOSED SPILLWAY |
| CS45 | 10 LF OF 18" ROLL CURB FOR SCM ACCESS AND MAINTENANCE. 2 LF CURB TRANSITION. REFER TO NCDOT DETAIL 840.01. |
| CS46 | COMBO. RIGHT/STRAIGHT ARROW (90ML) (T41); REFER TO NCDOT STANDARD DETAIL 1205.08 |
| CS47 | ROAD WIDENING FOR RIGHT-TURN LANE. REFER TO ROADWAY PLANS; SHEET C2.4 |
| CS48 | PRIVATE LIFT STATION; REFER TO LIFT STATION PLANS |

SCALE 1"=30'
0 30' 60'


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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 048231 JACOB C. DOOLEY
06/09/2026

| DATE | REVISION DESCRIPTION |
|---|---|
| 03/02/2026 | NCDOT ROADWAY EXHIBIT SUBMITTAL #1 |
| 03/20/2026 | NCDEQ, NCDOT, TOWN OF ERWIN, HRVI RESUBMITTALS |
| 04/29/2026 | HRVI RESUBMITTAL |
| 05/20/2026 | NCDOT SUBMITTAL |
| 06/09/2026 | HRVI SUBMITTAL #4 |

DATE 12/17/2025
DRAWN BY 332
DESIGNED BY J. DOOLEY
CHECKED BY J. DOOLEY
SCALE AS SHOWN

CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC
TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA
SITE PLAN

JOB NO. 37630.232
SHEET NO. C2.0


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## PAVING KEYNOTES

| NUMBER | HATCH | DESCRIPTION |
|---|---|---|
| P01 | | EXISTING PAVEMENT TO REMAIN UNDISTURBED. |
| P04 | | HEAVY DUTY ASPHALT PAVING; REFER TO PAVEMENT SECTIONS DETAIL. |
| P05 | | DOT ASPHALT; REFER TO PAVEMENT SECTIONS DETAIL. |
| P08 | | STANDARD DUTY CONCRETE PAVING; REFER TO PAVEMENT SECTIONS DETAIL. |
| P09 | | HEAVY DUTY CONCRETE PAVING; REFER TO PAVEMENT SECTIONS DETAIL. |
| P13 | | CONCRETE SIDEWALK; REFER TO CONCRETE SIDEWALK DETAIL |
| P16 | | BUILDING PAD; REFER TO ARCHITECTURAL PLANS BY OTHERS. |
| P18 | | TRANSFORMER PAD PER UTILITY PROVIDER SPECIFICATIONS. |
| P20 | | 1.5" MILL & OVERLAY; 1.5' WIDE |
| P21 | | CONCRETE PAVING OVER UST TANKS. REFER TO FUELING PLANS BY OTHERS FOR DETAILS. |
| P22 | | THICKENED EDGE; REFER TO DETAIL CK-##1 AND CK-150. |
| P23 | | REFER TO CONCRETE PAVEMENT JOINT DETAIL (TYP.); REFER TO DETAIL CK-175. |

NOTE: CURB & GUTTER NOT HATCHED. REFER TO SITE LAYOUT PLAN FOR ADDITIONAL INFORMATION.

ONE WAY
6" CONCRETE CURB
EDGE OF ASPHALT
STATE HWY 55
A.K.A. W 13TH STREET
(VARIABLE WIDTH RIGHT-OF-WAY)
PUBLICLY DEDICATED
45 MPH
WEST 55
WOODEN SIGN
ASPHALT
STREET INTERSECTION
DO NOT ENTER
MEDIAN/ DIVIDED HWY
6" CONCRETE CURB
WRONG WAY
NORTH 421/WEST 55
SOUTH 217/EAST 82
WRONG WAY
SITE CONTROL
5/8" CRB SET
N:577545.6365
E:2096715.2192
Z:192.23
U.S. HIGHWAY 421
A.K.A. E JACKSON BLVD
(160' RIGHT-OF-WAY)
PUBLICLY DEDICATED
LINDEN/COATS
DOWNTOWN
REFER TO ROADWAY PLANS (SHEET C2.4) FOR FULL PAVING EXTENTS
NCDOT R/W SITE ZONE EASEMENT MAP BOOK 2/PAGE 87 (TITLE EXCEPTIONS # 8)
N/F
GLENWOOD GILBERT &
CHRYSTAL ANN GORDON-GILBERT
DB-4628 PG-2245
PARCEL #0597-68-9052.000
GRAVEL
SINGLE STORY BRICK
F.F.E.=195.04
BUILDING HEIGHT=15.0'
N/F
CARLOS TOULON A TRUSTEE
& ANN L TOUON TRUSTEE
DB-3144 PG-119
PARCEL #0597-77-0965.000
N/F
CARLOS TOULON A TRUSTEE
& ANN L TOUON TRUSTEE
DB-3144 PG-122
PARCEL #0597-77-1940.000
WOODEN SHED
N/F
VISIONS & ACTIONS INC
DB-2152 PG-864
PARCEL #0597-77-2815.000
METAL TRAILER
F.F.E.=193.65
BUILDING HEIGHT=10.0'
3956 CORE S V2.0
FFE 190.00'
EXISTING WETLANDS NOT TO BE DISTURBED
WOODEN SHED
BUILDING HEIGHT=11.6'
N/F
CANTEEN TERESA DENEEN
DB-3235 PG-516
PARCEL #0597-77-2517.000
N/F
ALLEN LINDA
GERTRUDE MCKOY HEIRS
DB-823 PG-491
PARCEL #0597-77-1427.000
EDGE OF ASPHALT
BARNES DR
(50' RIGHT-OF-WAY)
PUBLICLY DEDICATED
GRAVEL
WOODEN PORCH
ASPHALT
CONCRETE
N/F
ANNIE MAE STOKES
DB-709 PG-683
PARCEL #0597-77-3738.000
SINGLE STORY FRAME
F.F.E.=193.40
BUILDING HEIGHT=18.5'
WOODEN SHED
BUILDING HEIGHT=10.0'
N/F
ANNIE MAE THOMAS
DB-2102 PG-967
PARCEL #0597-77-3796.000
METAL TRAILER
F.F.E.=194.75
BUILDING HEIGHT=12.5'
PROPANE TANK
WOODEN SHED
BUILDING HEIGHT=12.3'
N/F
SFR3-007 LLC
DB-3774 PG-793
PARCEL #0597-77-4721.000
WOODEN SHED
BUILDING HEIGHT=9.0'
METAL TRAILER
F.F.E.=193.28
BUILDING HEIGHT=13.6'
N/F
RICKY CAMPBELL &
SHARON DENISE CAMPBELL
DB-1182 PG-33
PARCEL #0597-77-3613.000

ISSUED FOR CONSTRUCTION

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NAD 83
SCALE 1"=30'
0 30' 60'

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 048231 JACOB C. DOOLEY
06/09/2026


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| NCDOT ROADWAY EXHIBIT SUBMITTAL #1 | 03/02/2026 |
| NCDEQ, NCDOT, TOWN OF ERWIN, HRW RESUBMITTALS | 03/20/2026 |
| HRW RESUBMITTAL | 04/29/2026 |
| NCDOT SUBMITTAL | 05/20/2026 |
| HRW SUBMITTAL #4 | 06/09/2026 |

DATE 12/17/2025
DRAWN BY 332
DESIGNED BY J. DOOLEY
CHECKED BY J. DOOLEY
SCALE AS SHOWN

# TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

## CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC

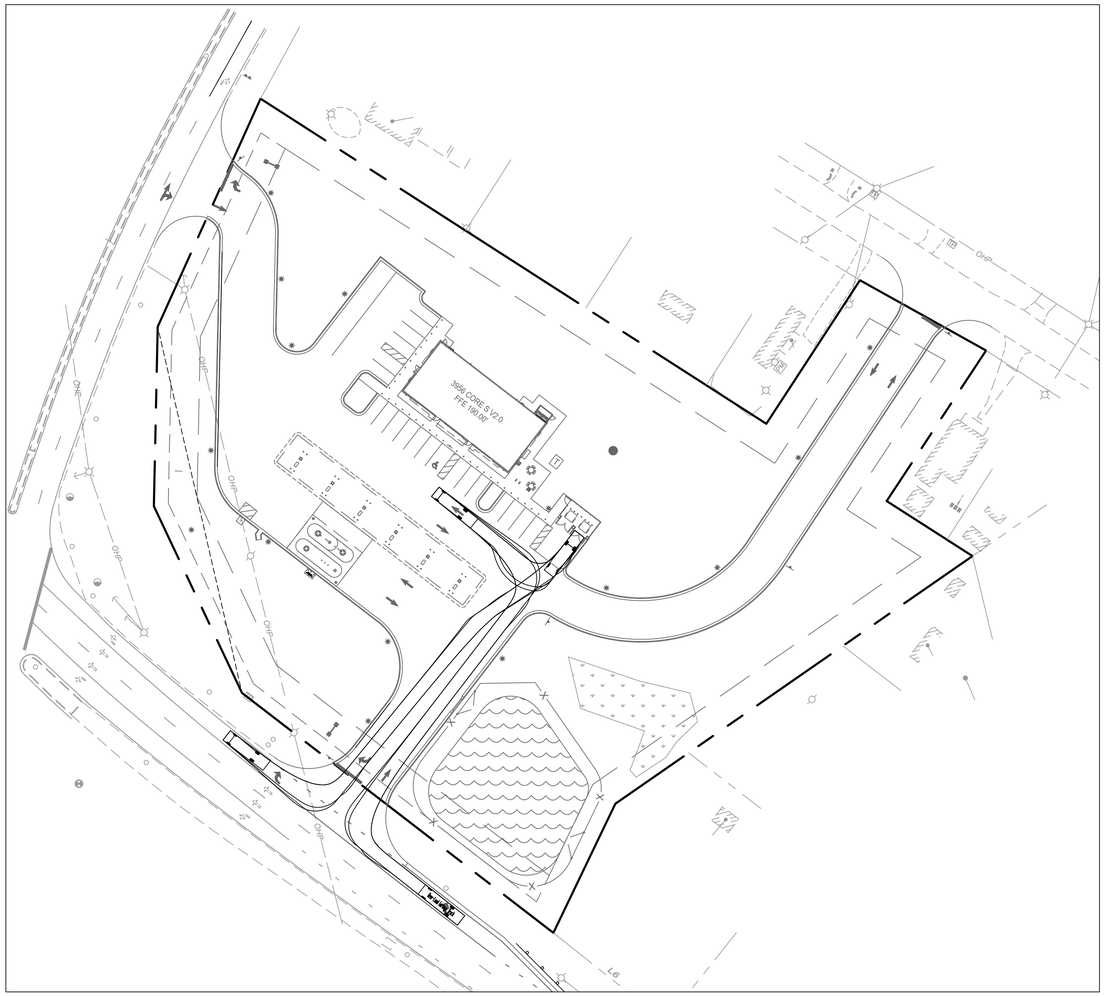
ERWIN - TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA

PAVEMENT PLAN

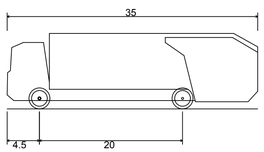
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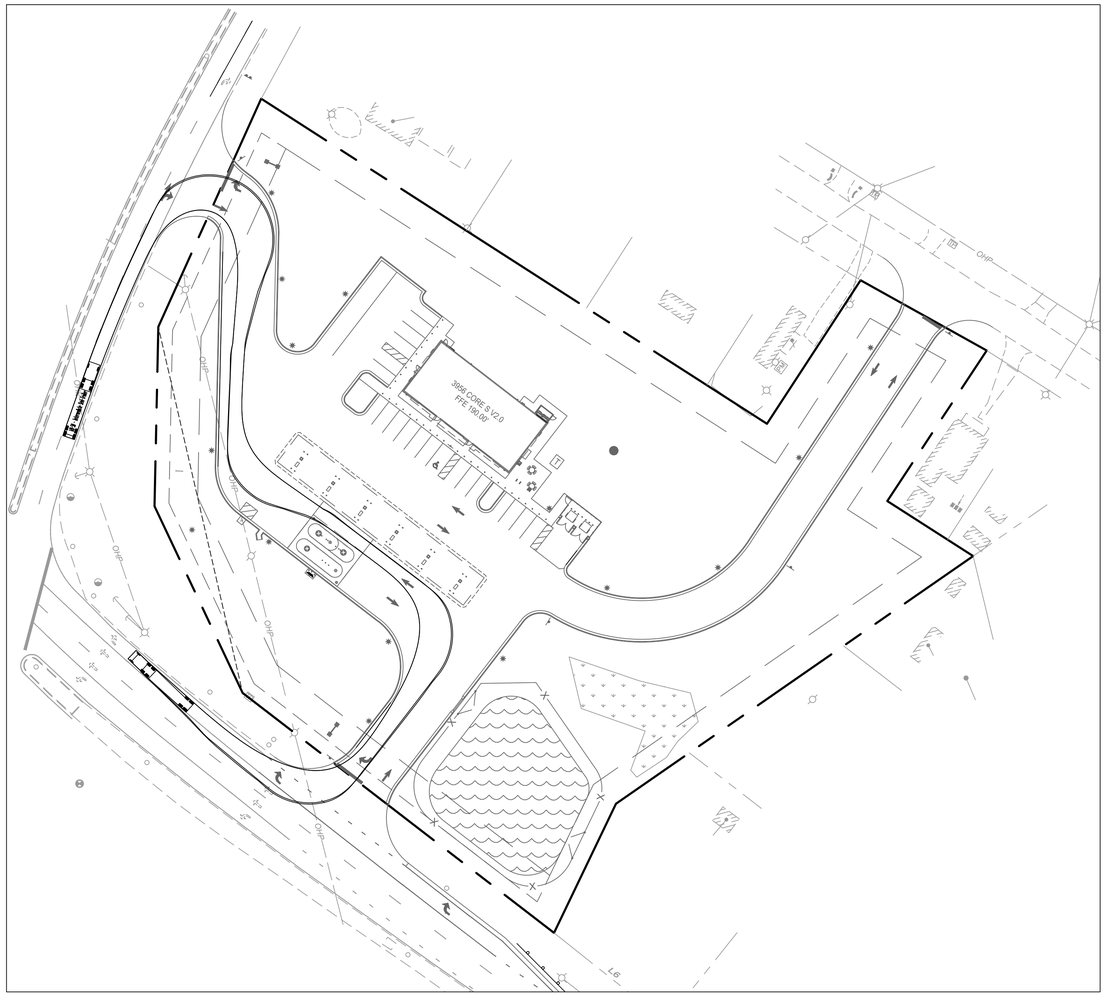

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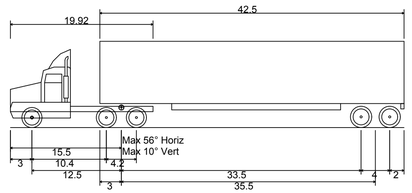

GARBAGE TRUCK ROUTING




Rear-Load Garbage Truck
Overall Length
Overall Width




GAS UST TRUCK ROUTING (WB-50)




WB-50 - Intermediate Semi-Trailer
Overall Length 55.000ft
Overall Width 8.500ft

ISSUED FOR CONSTRUCTION

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NAD 83

SCALE 1"=50'
0 50' 100'

NORTH CAROLINA PROFESSIONAL SEAL 048231 ENGINEER JACOB C. DOOLEY
06/09/2026

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| DATE | |
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| 03/02/2026 | NCDOT ROADWAY EXHIBIT SUBMITTAL #1 |
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NORTH CAROLINA LICENSE NO. C-1652

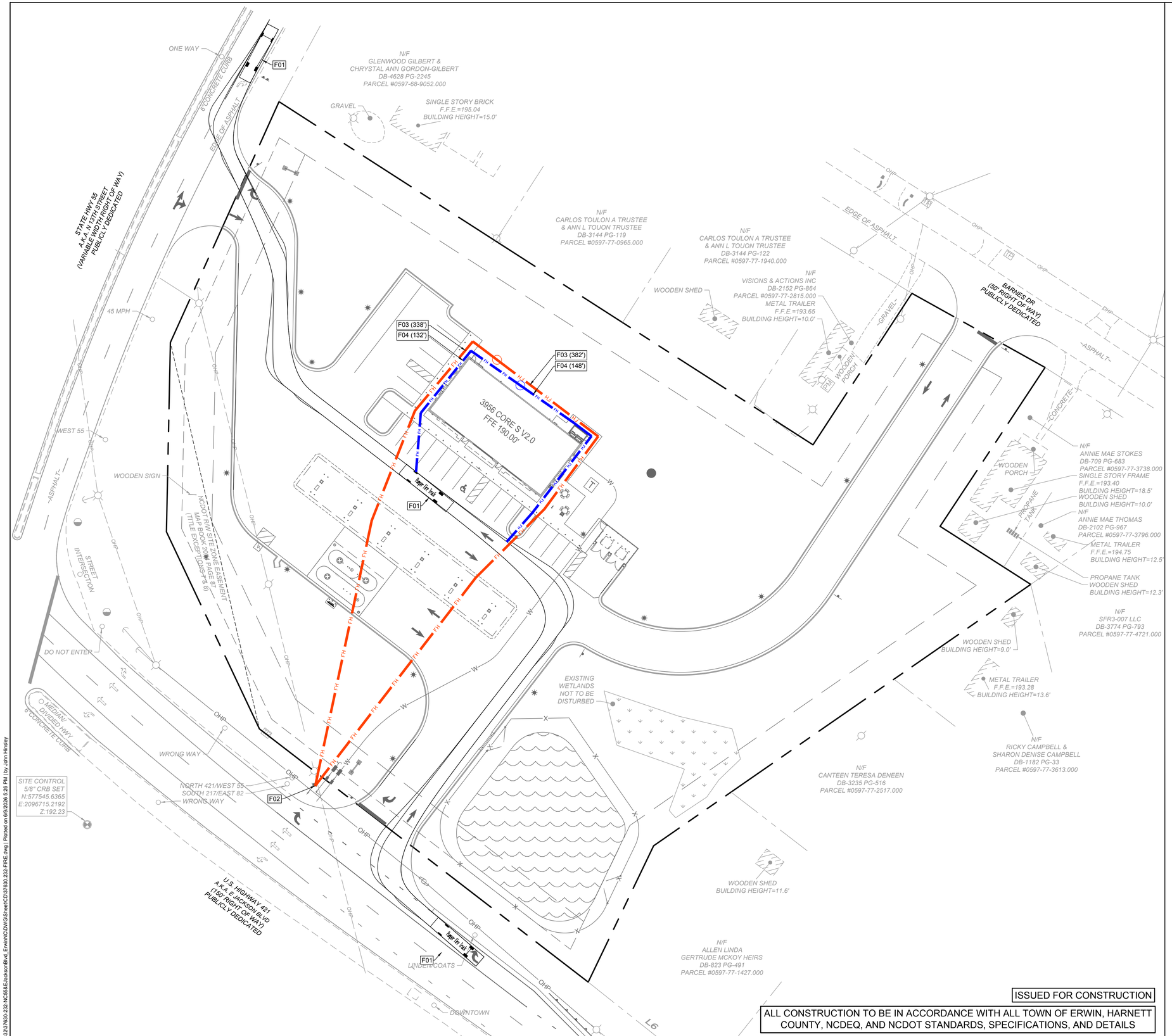
CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC
TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA

VEHICULAR ROUTING PLAN

JOB NO. 37630.232
SHEET NO. C2.2

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## FIRE TRUCK EXIT & HYDRANT ACCESS KEYNOTES

| NUMBER | DESCRIPTION |
|---|---|
| F01 | FIRE TRUCK (TYP.) |
| F02 | PROPOSED FIRE HYDRANT |
| F03 | <400 LF FROM HYDRANT (PULL-THE-HOSE-METHOD) |
| F04 | <150' LF FROM FIRE TRUCK (PULL-THE-HOSE-METHOD) |

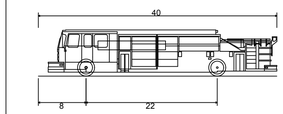
LEGEND:

DISTANCE FROM FIRE HYDRANT — FH — FH —

DISTANCE FROM FIRE TRUCK ACCESS — FH — FH — FH —

NOTE:

1. BUILDING WILL NOT BE SPRINKLED
   a. ALLOWED HOSE PULLS FOR FIRE TRUCK = 150 LF
   b. ALLOWED HOSE PULLS FOR FIRE HYDRANT = 400 LF




| | |
|---|---|
| Pumper Fire Truck | |
| Overall Length | 40.000ft |
| Overall Width | 8.167ft |

ISSUED FOR CONSTRUCTION

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NAD 83

SCALE 1"=30'

0 30' 60'

NORTH CAROLINA PROFESSIONAL SEAL 048231 ENGINEER JACOB C. DOOLEY

06/09/2026

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REVISION DESCRIPTION:
- NCDOT ROADWAY EXHIBIT SUBMITTAL #1
- NCDEQ, NCDOT, TOWN OF ERWIN, HRW RESUBMITTALS
- HRW RESUBMITTAL
- HRW SUBMITTAL
- HRW SUBMITTAL #4

| DATE |
|---|
| 03/02/2026 |
| 03/20/2026 |
| 04/29/2026 |
| 05/20/2026 |
| 06/09/2026 |

DATE: 12/17/2025
DRAWN BY: 332
DESIGNED BY: J. DOOLEY
CHECKED BY: J. DOOLEY
SCALE: AS SHOWN

# TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

## CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC

TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA

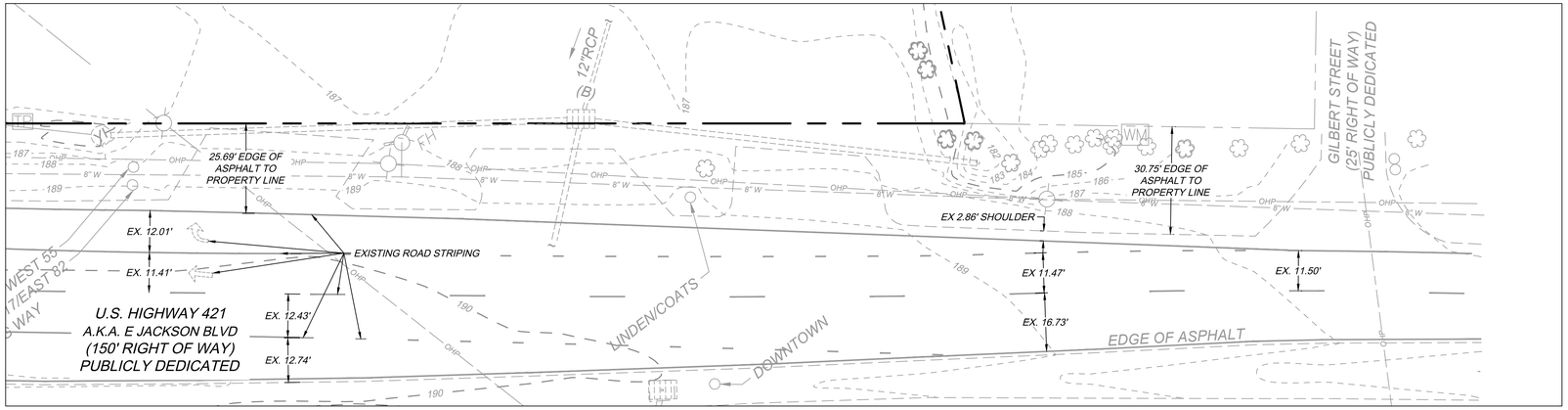
FIRE APPARATUS ROUTING PLAN

JOB NO. 37630.232

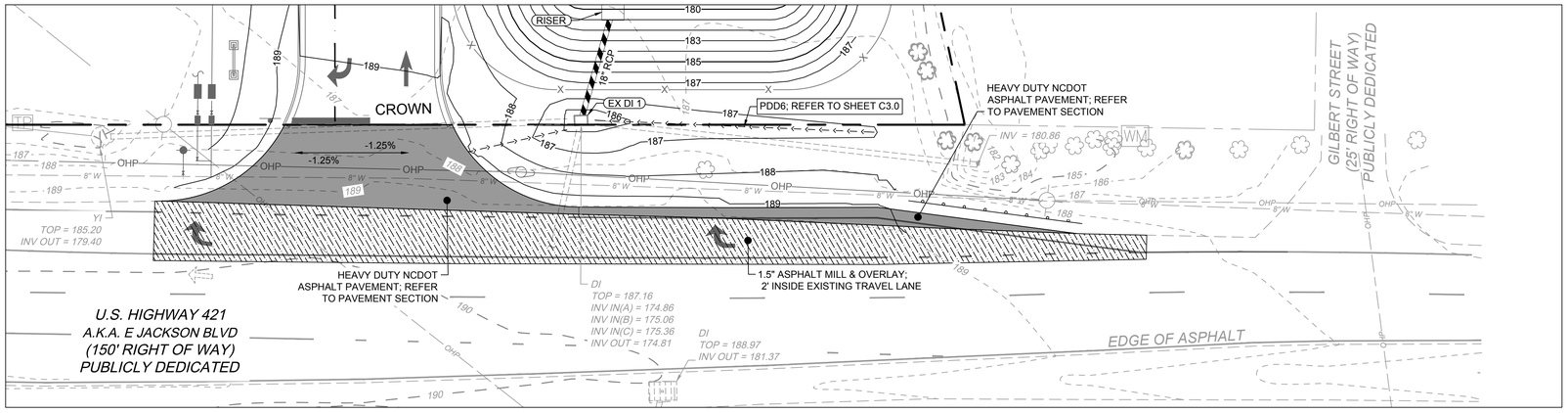
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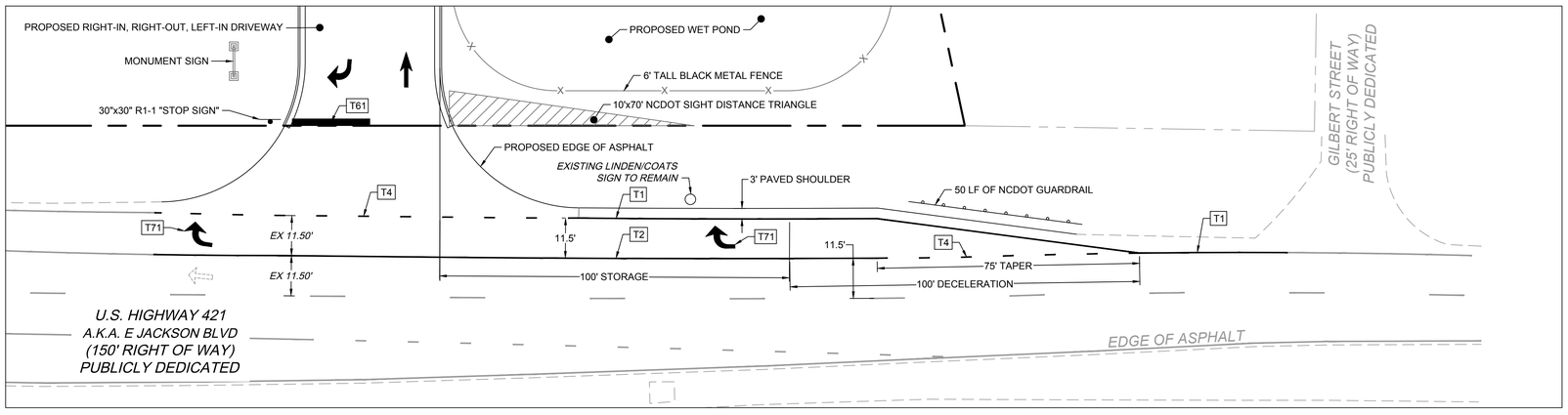
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E JACKSON BLVD (US HWY 421) - EXISTING CONDITIONS




E JACKSON BLVD (US HWY 421) - PROPOSED WIDENING AND GRADING




E JACKSON BLVD (US HWY 421) - PROPOSED STRIPING AND SIGNAGE

## TRAFFIC CONTROL KEYNOTES

| Symbol | Description | Material | Linear Length Adjustment |
|---|---|---|---|
| T1 | WHITE EDGE LINE (4", 90 MIL); REFER TO NCDOT STANDARD DETAIL 1205.01. | Termo | 1 |
| T2 | WHITE SOLID LANE LINE (4", 90 MIL); REFER TO NCDOT STANDARD DETAIL 1205.01. | Thermo | 1 |
| T4 | 3 FT. - 9 FT./SP WHITE MINISKIP (4", 90 MIL); REFER TO NCDOT STANDARD DETAIL 1205.01. | Thermo | .25 |
| T61 | WHITE STOPBAR (24", 90 MIL); REFER TO NCDOT STANDARD DETAIL 1205.01. | Thermo | 1 |
| T71 | RIGHT TURN ARROW (90 MIL); REFER TO NCDOT STANDARD DETAIL 1205.08. | Thermo | 1 |

POSTED SPEED LIMIT = 45 MPH
DESIGN SPEED LIMIT = 50 MPH

ISSUED FOR CONSTRUCTION

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ERWIN, HARNETT COUNTY, NCDEQ, AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

## TRAFFIC CONTROL AND PEDESTRIAN PLAN NOTES

GENERAL NOTES:

- ALL WORK SHALL BE IN ACCORDANCE WITH HARNETT COUNTY AND/OR NCDOT STANDARD DETAILS AND SPECIFICATIONS.
- PRIOR TO THE START OF WORK, THE CLIENT SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH NCDOT TO REVIEW THE SPECIFIC COMPONENTS OF THE APPROVED PLAN, AND ENSURE ALL PERMITS ARE ISSUED.
- MUST HAVE AN ISSUED RIGHT-OF-WAY PERMIT FOR STREET AND LANE CLOSURE TO CONDUCT ANY WORK IN THE RIGHT-OF-WAY.
- ALL PERMITS MUST BE AVAILABLE ON-SITE DURING THE OPERATION.
- FIELD ADJUSTMENTS TO THE APPROVED PLAN MAY BE REQUIRED BY NCDOT AS NEEDED DURING CONSTRUCTION.
- ANY REVISION TO THE APPROVED PLAN MUST BE APPROVED BY NCDOT PRIOR TO IMPLEMENTATION.
- ANY DAMAGE TO THE RIGHT OF WAY SHALL BE REPAIRED PER NCDOT SPECIFICATIONS AT NO COST TO THE CITY.
- ALL PAVEMENT MARKINGS SHALL BE RESTORED TO ORIGINAL PLACEMENT AND CONDITIONS.
- CONSTRUCTION FENCING SHOULD NOT ENCROACH INTO THE PUBLIC RIGHT OF WAY. IF IT DOES, IT MUST BE MOVABLE IN CASE ADJUSTMENTS HAVE TO BE MADE. NO DRILLING, BORING OR ANY PERMANENT FASTENING OF THE FENCE IS ALLOWED IN THE PUBLIC RIGHT OF WAY.
- NO PORTABLE RESTROOMS ARE PERMITTED IN THE PUBLIC RIGHT OF WAY. ACCESSIBLE RESTROOMS MUST BE PROVIDED ON SITE.
- ALL SIGNAGE MUST BE VERIFIED AND MAINTAINED PROPERLY BY CONTRACTOR BEFORE THE START OF WORK AND REMAIN INTACT FOR THE DURATION OF THE PROJECT.
- DRIVEWAYS IMPACTED BY THE LANE CLOSURE MUST REMAIN ACCESSIBLE.
- SEDIMENT AND EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF THE PROJECT. SUCH MEASURES INCLUDE BUT ARE NOT LIMITED TO; SILT FENCE, INLET PROTECTION, AND CONSTRUCTION ENTRANCE.
- ALL EXISTING UNDERGROUND UTILITIES SHALL BE LOCATED PRIOR TO BEGINNING ANY EXCAVATION OR UNDERGROUND CONSTRUCTION. ALL UNDERGROUND UTILITY LOCATES SHALL BE ORDERED NO LESS THAT 3 DAYS PRIOR AND NO MORE THAN 12 DAYS PRIOR TO THE BEGINNING OF SAID EXCAVATION OR UNDERGROUND CONSTRUCTION.
- CURB/SIDEWALK REMOVAL DEBRIS, PRE-MADE BUILDING PACKAGES, GRAVEL, SOD, ETC. SHALL NOT BE STOCKPILED WITHIN THE PUBLIC RIGHT OF WAY.
- IF WORK IS BEING PERFORMED 5' FROM EDGE OF PAVEMENT NO LANE CLOSURE IS REQUIRED. SIGNAGE OF WORK AHEAD IS REQUIRED TO NOTIFY TRAFFIC AND PEDESTRIANS.
- IF WORK IS BEING PERFORMED 15' FROM THE EDGE OF PAVEMENT NO LANE CLOSURE. SIGNAGE OF WORK AHEAD IS REQUIRED TO NOTIFY TRAFFIC.
- A MINIMUM TWO-WAY ACCESS OF 20' IS REQUIRED AT ALL TIMES FOR TRAFFIC, NOT INCLUDING THE CURB AND GUTTER AREAS.
- IF ANY OPERATOR/CONTRACTOR PARKS IN A RESIDENTIAL AREA FORCING THE HOMEOWNER/RESIDENT TO PARK ON THE OTHER SIDE OF THE ROAD, NARROWING TO 20' OR LESS, THE OPERATOR/CONTRACTOR IS LIABLE TO ENSURE A LANE CLOSURE PERMIT IS OBTAINED.
- SIGHT VISIBILITY MUST BE MAINTAINED AT ALL TIMES.

LANE OBSTRUCTIONS:

- ALL TRAFFIC CONTROL SIGNAGE AND PRACTICES SHALL ADHERE TO THE MANUAL ON UNIFORM TRAFFIC CONTROL, AND THE LATEST EDITION OF THE NCDOT "STANDARD SPECIFICATION FOR ROADWAY STRUCTURES", NCDOT "ROADWAY STANDARD DRAWING MANUAL", AND THE NCDOT SUPPLEMENT TO THE MUTCD.
- LANE OBSTRUCTIONS: PRIOR TO ANY LANE OBSTRUCTION, THE CONTRACTOR SHALL NOTIFY NCDOT AT LEAST FIVE BUSINESS DAYS PRIOR TO THE START OF WORK. THE CONTRACTOR MUST HAVE AN APPROVED PERMIT NUMBER AND TRAFFIC CONTROL PLAN (IF PREVIOUSLY APPROVED).
- IF THERE IS NO APPROVED TRAFFIC CONTROL PLAN OR PERMIT, THE CONTRACTOR WILL BE REQUIRED TO PROVIDE A PLAN AND PERMIT REQUEST FOR APPROVAL.

PAVEMENT MARKING NOTES:

- LOCATION OF PAVEMENT MARKINGS SHALL CONFORM TO NCDOT PAVEMENT MARKING STANDARDS. APPLICATION OF PAVEMENT MARKINGS SHALL BE DONE IN ACCORDANCE WITH SECTION 1205 OF THE N.C. DIVISION OF HIGHWAYS STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES HANDBOOK (2024 EDITION) WITH REVISION(S) THERETO.
- ALL EXISTING PAVEMENT MARKINGS SHALL BE ERADICATED PER NCDOT SPECIFICATIONS PRIOR TO PLACEMENT OF MARKING SHOWN HEREIN.
- THE CONTRACTOR SHALL BE REQUIRED TO PRE-MARK THE PAVEMENT PRIOR TO ACTUAL APPLICATION OF MARKINGS WITHIN THE NCDOT RIGHT OF WAY. THE CONTRACTOR SHALL SCHEDULE A PRE-MARKING INSPECTION REVIEW WITH THE NCDOT DISTRICT ENGINEER AT LEAST ONE WEEK PRIOR TO MARKING. PAVEMENT MARKINGS SHALL NOT BE INSTALLED UNTIL AFTER FIELD REVIEW AND APPROVAL BY THE NCDOT DISTRICT ENGINEER.
- PAVEMENT MARKINGS SHALL MATCH TO AND ALIGN WITH EXISTING CONDITIONS AND MARKINGS. THE CONTRACTOR SHALL PROVIDE THERMOPLASTIC MARKINGS ON ROADWAYS .
- THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL THERMOPLASTIC MARKINGS AND RAISED REFLECTIVE PAVEMENT MARKERS FOR NEWLY CONSTRUCTED TURN LANES TO NCDOT SPECIFICATIONS AND DIMENSIONAL STANDARDS. RAISED PAVEMENT MARKERS TO BE APPROVED AND INSTALLED PER NCDOT STANDARDS.
- ALL PAVEMENT MARKINGS WITHIN NCDOT RIGHT-OF-WAY SHALL BE LONG LIFE THERMOPLASTIC.
- CONTACT NCDOT TRAFFIC SERVICES FOR PAVEMENT MARKING LAYOUT.
- ALL DIMENSIONS ARE TO FACE OF CURB.
- CONTRACTOR TO ADJUST ALL APPURTENANCES TO MATCH EXISTING GRADE.
- PRIOR TO CONSTRUCTION, CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DRIVEWAYS AND DRIVEWAY PIPES THROUGHOUT CONSTRUCTION. MAINTAIN VEHICULAR ACCESS AT ALL TIMES.
- CONTRACTOR TO PERFORM TRAFFIC CONTROL AND TEMPORARY LANE CLOSURES PER NCDOT STANDARDS.
- ALL CURB AND GUTTER INSIDE PUBLIC RIGHT-OF-WAY SHALL BE 30 INCHES WIDE PER NCDOT STANDARDS.
- SNOWPLOWABLE REFLECTORS SHOULD BE USED PER NCDOT STANDARDS.
- ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC AND INSTALLED ACCORDING TO MOST CURRENT NCDOT STANDARDS.

GUARDRAIL:

- THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

**PAVEMENT SECTION-WIDENING GREATER THAN 6' WIDTH**

| | |
|---|---|
| TYPE S-9.5C SURFACE COURSE | 3-IN |
| TYPE I19.0C BINDER COURSE | 4-IN |
| TYPE B-25.0C BASE COURSE | 10-IN |

COMPACTED SUBGRADE

**PAVEMENT SECTION-WIDENING LESS THAN OR EQUAL TO 6' WIDTH**

| | |
|---|---|
| TYPE S-9.5C SURFACE COURSE | 3-IN |
| TYPE I19.0C BINDER COURSE | 4-IN |
| TYPE B-25.0C BASE COURSE | 5-IN |

COMPACTED SUBGRADE

* OVERLAY AREAS - 1.5" S9.5C

NOTES:

1. PREPARING, GRADING, SHAPING, AND COMPACTION OF SUBGRADE SOILS SHOULD BE PERFORMED IN ACCORDANCE WITH DIVISION 5, SECTION 501 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (2006). PREPARING, GRADING, SHAPING, AND COMPACTION OF AGGREGATE BASE COURSE (CABC) STONE SHOULD BE PERFORMED IN ACCORDANCE WITH DIVISION 5, SECTION 520 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (2006). PLACEMENT AND COMPACTION OF THE BITUMINOUS CONCRETE SHOULD BE PERFORMED IN ACCORDANCE WITH DIVISION 6, SECTION 600 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (2006). PROPER SUBGRADE COMPACTION, ADHERENCE TO THE NCDOT SPECIFICATIONS, AND COMPLIANCE WITH PROJECT PLANS AND SPECIFICATIONS ARE CRITICAL TO THE PERFORMANCE OF THE CONSTRUCTED PAVEMENT.
2. THE CONTRACTOR MAY CHOOSE TO INSTALL INTERMEDIATE COURSES OF PAVEMENT TO STABILIZE THE SITE DURING CONSTRUCTION AT NO ADDITIONAL COST. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE ADEQUATE THICKNESS REQUIRED FOR INTERMEDIATE PAVING. INCREASES IN THE DESIGN PAVEMENT SECTION TO FACILITATE INTERMEDIATE PAVING SHALL BE PROVIDED AT NO ADDITIONAL COST.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGES TO SUBGRADE, INSTALLED BASE COURSE AND/OR INTERMEDIATE PAVING PRIOR TO PLACING SUBSEQUENT PAVEMENT LIFTS AT NO ADDITIONAL COST.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING PAVEMENT DURING ALL PHASES OF WORK. THE FINAL SURFACE OF PAVEMENT SHALL BE FREE OF ALL DEFECTS OR DAMAGE.

**NCDOT ASPHALT PAVEMENT SECTION**

**NOT TO SCALE**

## MATERIALS LEGEND

PROPOSED HEAVY DUTY ASPHALT PAVEMENT SECTION PER NCDOT SPECIFICATIONS. SEE DETAIL BELOW.

MILL AND REPLACE MIN. 1.5" S9.5C

NAD 83

SCALE 1"=20'

0 20' 40'


NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 048231 JACOB C. DOOLEY
06/09/2026

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| DATE | REVISION DESCRIPTION |
|---|---|
| 03/02/2026 | NCDOT ROADWAY EXHIBIT SUBMITTAL #1 |
| 03/20/2026 | NCDEQ, NCDOT, TOWN OF ERWIN, HRW RESUBMITTALS |
| 04/29/2026 | HRW RESUBMITTAL |
| 05/20/2026 | NCDOT SUBMITTAL |
| 06/09/2026 | HRW SUBMITTAL #4 |

DATE 12/17/2025
DRAWN BY 332
DESIGNED BY J. DOOLEY
CHECKED BY J. DOOLEY
SCALE AS SHOWN

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC
TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA
ROADWAY PLAN

JOB NO. 37630.232
SHEET NO. C2.4

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## PERMANENT DITCH SUMMARY TABLE

| DITCH NAME | MIN. TOP WIDTH (FT) | MIN. DITCH DEPTH (FT) | MIN. BOTTOM WIDTH (FT) | SIDE SLOPE | LINER TYPE |
|---|---|---|---|---|---|
| PDD1 | 7 | 1 | 1 | 3:1 | CURLED MAT |
| PDD2 | 7.5 | 1.25 | 0 | 3:1 | NORTH AMERICAN GREEN, S75 |
| PDD3 | 6 | 1 | 0 | 3:1 | CURLED MAT |
| PDD4 | 20 | 1 | 0 | 10:1 | CURLED MAT |
| PDD5 | 30 | 3 | 0 | 5:1 | NORTH AMERICAN GREEN, S75 |
| PDD6 | 6 | 1 | 0 | 3:1 | NORTH AMERICAN GREEN, S75 |

## STORM PIPE TABLE

| FROM - TO | UPSTREAM INVERT | DOWNSTREAM INVERT | SLOPE | LENGTH | DIA. | MATERIAL | DESCRIPTION |
|---|---|---|---|---|---|---|---|
| - 107 CO | 187.00' | 185.92' | 6.02% | 17.93 LF | 6" | HDPE | 6" HDPE |
| - 108 NI | 187.00' | 186.40' | 3.56% | 16.87 LF | 6" | HDPE | 6" HDPE |
| 101 CB - 100 FES | 180.82' | 180.50' | 1.00% | 31.89 LF | 30" | RCP | CLASS III |
| 102 CB - 101 CB | 182.33' | 181.52' | 1.00% | 80.55 LF | 18" | RCP | CLASS III |
| 103 CO - 102 CB | 183.94' | 183.16' | 1.00% | 77.34 LF | 8" | HDPE | 8" HDPE |
| 104 NI - 103 CO | 185.33' | 183.94' | 2.25% | 61.72 LF | 8" | HDPE | 8" HDPE |
| 105 CO - 104 NI | 185.48' | 185.33' | 1.00% | 15.23 LF | 8" | HDPE | 8" HDPE |
| 106 NI - 105 CO | 185.70' | 185.48' | 1.00% | 22.09 LF | 8" | HDPE | 8" HDPE |
| 107 CO - 106 NI | 185.92' | 185.70' | 1.00% | 22.35 LF | 8" | HDPE | 8" HDPE |
| 108 NI - 107 CO | 186.23' | 185.92' | 1.00% | 31.49 LF | 8" | HDPE | 8" HDPE |
| 202 DI - 101 CB | 182.21' | 181.42' | 1.00% | 78.52 LF | 18" | RCP | CLASS III |
| 301 FES - 300 FES | 185.60' | 185.00' | 1.10% | 54.46 LF | 15" | RCP | CLASS V |
| 401 PPES - 400 PPES | 189.10' | 188.10' | 1.36% | 73.33 LF | 15" | RCP | CLASS V |
| RISER - EX DI 1 | 176.90' | 176.00' | 2.73% | 33.01 LF | 18" | RCP | CLASS III |

## GRADING AND STORM DRAINAGE NOTES

1. CONTRACTOR SHALL CALL "NORTH CAROLINA ONE CALL" (811) AT LEAST 3 DAYS PRIOR TO DIGGING TO HAVE EXISTING UTILITIES LOCATED. REPORT ANY DISCREPANCIES TO THE ENGINEER.
2. CONTRACTOR TO COORDINATE ACTIVITIES WITH UTILITY COMPANIES INVOLVED IN ANY RELATED RELOCATION (I.E. POWER POLES, TELEPHONE PEDESTALS, WATER METERS, ETC.).
3. EXISTING UTILITIES SHOWN ARE BASED ON FIELD SURVEYS AND THE BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL VERIFY CONDITIONS PRIOR TO BEGINNING CONSTRUCTION. ANY DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND THE PLANS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
4. THE CATCH BASINS AND YARD INLETS SHALL BE CONSTRUCTED IN THE LOCATIONS SHOWN UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR REPORTING ANY DISCREPANCIES IN THE CATCH BASIN ELEVATIONS OR THE PROPOSED PIPE SLOPES TO THE ENGINEER. THE CONTRACTOR IS ALSO RESPONSIBLE TO REPORT ANY CONFLICTS BETWEEN ANY UTILITY, STORM DRAIN LINE, WATER LINE, SEWER LINE OR ANY OTHER PROPOSED OR EXISTING STRUCTURE TO THE ENGINEER.
5. A LAND DISTURBING PERMIT WILL BE REQUIRED PRIOR TO THE COMMENCEMENT OF ANY LAND-DISTURBING ACTIVITIES.
6. ALL EXISTING VAULTS, MANHOLES, STORM DRAIN STRUCTURES, VALVE BOXES, CLEANOUTS, ETC. SHALL BE ADJUSTED AS NEEDED TO MATCH FINISHED GRADE.
7. ALL BACKFILL, COMPACTION, SOILS TESTING, ETC. SHALL BE PERFORMED BY THE OWNER'S INDEPENDENT TESTING LABORATORY.
8. A PRE-CONSTRUCTION MEETING MUST BE SCHEDULED PRIOR TO ANY WORK, GRADING OR INSTALLATION OF EROSION CONTROL MEASURES.
9. ALL HANDICAP PARKING SPACES AND STRIPED ACCESSIBILITY AISLES ARE TO HAVE NO MORE THAN A 1:50 (2.0%) SLOPE IN ALL DIRECTIONS. ALL SIDEWALKS ARE TO HAVE NO MORE THAN A 1:20 (5.0%) SLOPE FOR THE LENGTH OF THE SIDEWALK AND NO MORE THAN A 1:50 (2.0%) SLOPE FOR THE WIDTH OF THE SIDEWALK.
10. CONTRACTOR TO IDENTIFY ALL NECESSARY SPILL CURB SECTION LOCATIONS AND INSTALL TO ENSURE POSITIVE DRAINAGE TO STORM STRUCTURES.
11. IF CONTRACTOR NOTICES ANY DISCREPANCIES IN ANY OF THESE SLOPE REQUIREMENTS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE OWNER PRIOR TO POURING ANY CONCRETE SO THAT A SOLUTION CAN BE FOUND.
12. SPOT ELEVATIONS ARE GIVEN AT THE MAJORITY OF THE MAJOR BREAK POINTS (REFER TO SPOT GRADING PLAN) BUT IT SHOULD NOT BE ASSUMED THAT ALL NECESSARY SPOT ELEVATIONS ARE SHOWN. DUE TO SPACE LIMITATIONS, THERE MAY BE OTHER CRITICAL SPOTS NOT LABELED THAT SHOULD BE TAKEN INTO CONSIDERATION. THE CONTRACTOR SHALL REVIEW THE GRADING PLAN IN DETAIL AND SHALL ENSURE THAT ALL CRITICAL GRADE POINTS ARE STAKED AND FOLLOWED TO PROVIDE POSITIVE DRAINAGE.
13. EXISTING VEGETATION WITHIN TREE PROTECTIVE AREAS SHALL REMAIN UNDISTURBED UNLESS NOTED OTHERWISE. ANY AND ALL LANDSCAPING AND EXISTING TREES AND SHRUBS TO REMAIN WHICH ARE DAMAGED DURING DEMOLITION OR CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR USING A LICENSED LANDSCAPE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
14. THE GRADING CONTRACTOR SHALL COMPLY WITH ALL STATE CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF-SITE. THE GRADING CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY THE EROSION CONTROL INSPECTOR OR THE ENGINEER.
15. THE GRADING CONTRACTOR SHALL BE RESPONSIBLE FOR OFF-SITE DISPOSAL OF ALL CLEARING AND GRADING WASTE MATERIALS GENERATED DURING CONSTRUCTION AND FOR OBTAINING ALL APPLICABLE PERMITS FOR OFF-SITE STOCKPILES AND/OR WASTE AREAS.
16. ALL CATCH BASINS MUST BE MARKED "DUMP NO WASTE DRAINS TO STREAM" OR EQUIVALENT.

## GRADING PLAN KEYNOTES

| NUMBER | DESCRIPTION |
|---|---|
| CG01 | CONNECT ROOF DRAIN DOWN SPOUTS UNDERGROUND TO STORM PIPE; REFER TO PLAN FOR SIZE (TYP.). REFER TO DETAIL CK-212. |
| CG02 | STORM CLEANOUT; REFER TO DETAIL CK-210. TRAFFIC RATED IF WITHIN PAVEMENT (TYP.). |
| CG03 | 6" HDPE ROOF DRAIN SYSTEM. MINIMUM COVER OF 2' AND MINIMUM SLOPE OF 1.00%. |
| CG04 | WET POND STORMWATER CONTROL MEASURE |
| CG05 | 10' WIDE MAINTENANCE BERM |
| CG06 | VARIABLE WIDTH PRIVATE DRAINAGE AND SCM ACCESS / MAINTENANCE EASEMENT |
| CG07 | ADA STALLS (MAX SLOPE 1:50) |
| CG08 | MATCH EXISTING PAVEMENT ELEVATION |
| CG09 | CLASS A RIP RAP DISSIPATER PAD (7.5'W X 6'L X 12"D) |
| CG10 | CLASS A RIP RAP DISSIPATER PAD (6'W X 4'L X 12"D) |
| CG11 | CLASS B RIP RAP DISSIPATER PAD (7.5'W X 15'L X 18"D) |
| CG16 | 3' WIDE CONCRETE FLUME |
| CG17 | CLASS A RIP RAP DISSIPATER PAD (3'W X 6'L X 12"D) |
| CG18 | CLASS A RIP RAP DISSIPATER PAD (4'W X 5'L X 12"D) |
| CG19 | EXISTING DROP INLET. RESET RIM ELEVATION TO 185.90' |
| CG20 | TAPER CURB AND GUTTER TO FULL HEIGHT OVER 10' (TYP.); REFER TO DETAIL CK-135 |

## STORM STRUCTURE TABLE

| STR. # | TOP | INV. IN | INV. OUT | DESCRIPTION |
|---|---|---|---|---|
| 100 FES | | 180.50' (30" RCP FROM 101 CB) | | FLARED END SECTION |
| 101 CB | 187.00' | 181.42' (18" RCP FROM 202 DI)<br>181.52' (18" RCP FROM 102 CB)<br>182.32' (6" HDPE FROM C CO 1) | 180.82' (30" RCP TO 100 FES) | NCDOT 840.02 CONCRETE CATCH BASIN |
| 102 CB | 187.93' | 183.16' (8" HDPE FROM 103 CO) | 182.33' (18" RCP TO 101 CB) | NCDOT 840.02 CONCRETE CATCH BASIN |
| 103 CO | 188.54' | 183.94' (8" HDPE FROM 104 NI) | 183.94' (8" HDPE TO 102 CB) | 6" CLEANOUT |
| 104 NI | 187.50' | 185.33' (8" HDPE FROM 105 CO) | 185.33' (8" HDPE TO 103 CO) | 12" NYLOPLAST INLET WITH DOME GRATE |
| 105 CO | 188.43' | 185.48' (8" HDPE FROM 106 NI) | 185.48' (8" HDPE TO 104 NI) | 6" CLEANOUT |
| 106 NI | 188.20' | 185.70' (8" HDPE FROM 107 CO) | 185.70' (8" HDPE TO 105 CO) | 12" NYLOPLAST INLET WITH DOME GRATE |
| 107 CO | 188.71' | 185.92' (8" HDPE FROM 108 NI)<br>185.92' (6" HDPE FROM ) | 185.92' (8" HDPE TO 106 NI) | 6" CLEANOUT |
| 108 NI | 188.00' | 186.40' (6" HDPE FROM ) | 186.23' (8" HDPE TO 107 CO) | 12" NYLOPLAST INLET WITH DOME GRATE |
| 202 DI | 185.10' | | 182.21' (18" RCP TO 101 CB) | NCDOT 840.14 CONCRETE DROP INLET |
| 300 FES | | 185.00' (15" RCP FROM 301 FES) | | FLARED END SECTION |
| 301 FES | | | 185.60' (15" RCP TO 300 FES) | FLARED END SECTION |
| 400 PPES | | 188.10' (15" RCP FROM 401 PPES) | | NCDOT 310.04 PARALLEL PIPE END SECTION |
| 401 PPES | | | 189.10' (15" RCP TO 400 PPES) | NCDOT 310.04 PARALLEL PIPE END SECTION |
| EX DI 1 | 185.90' | 176.00' (18" RCP FROM RISER) | 174.81' (EXIST 18" RCP) | EXISTING DROP INLET, RESET TO FINISHED GRADE |
| RISER | 184.00' | | 176.90' (18" RCP TO EX DI 1) | RISER; SEE SCM DETAILS |

ISSUED FOR CONSTRUCTION

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NORTH CAROLINA PROFESSIONAL SEAL 048231 ENGINEER JACOB C. DOOLEY
06/09/2026

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| REVISION DESCRIPTION | DATE |
|---|---|
| NCDOT ROADWAY EXHIBIT SUBMITTAL #1 | 03/02/2026 |
| NCDEQ, NCDOT, TOWN OF ERWIN, HRVI RESUBMITTALS | 03/20/2026 |
| HRVI RESUBMITTAL | 04/29/2026 |
| NCDOT SUBMITTAL | 05/20/2026 |
| HRVI SUBMITTAL #4 | 06/09/2026 |

DATE 12/17/2025
DRAWN BY 332
DESIGNED BY J. DOOLEY
CHECKED BY J. DOOLEY
SCALE AS SHOWN

# TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

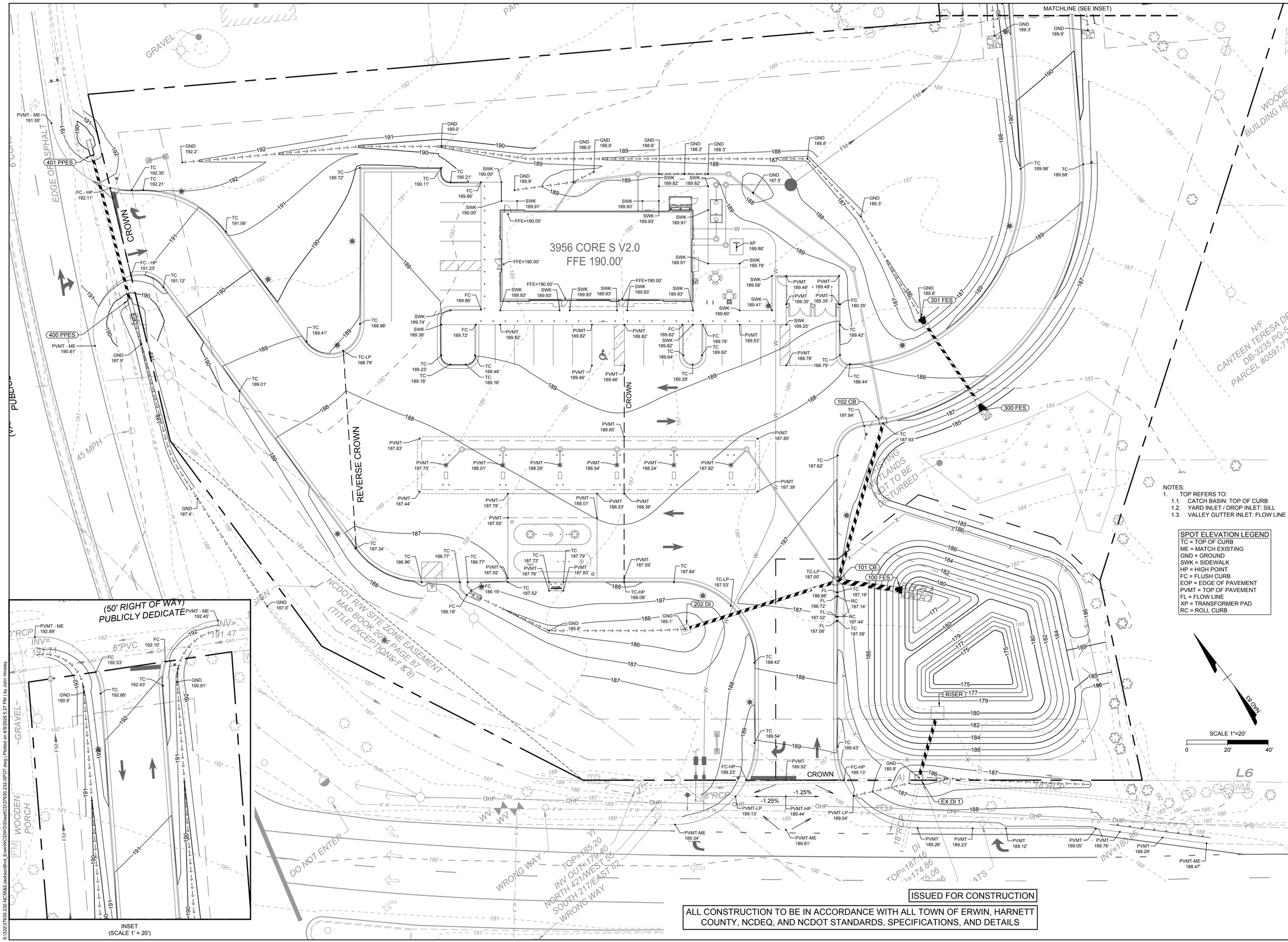
# CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC
TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA

## GRADING AND DRAINAGE PLAN

JOB NO. 37630.232
SHEET NO. C3.0

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NOTES:
1. TOP REFERS TO:
   1.1. CATCH BASIN: TOP OF CURB
   1.2. YARD INLET / DROP INLET: SILL
   1.3. VALLEY GUTTER INLET: FLOW LINE

SPOT ELEVATION LEGEND

| |
|---|
| TC = TOP OF CURB |
| ME = MATCH EXISTING |
| GND = GROUND |
| SWK = SIDEWALK |
| HP = HIGH POINT |
| FC = FLUSH CURB |
| EOP = EDGE OF PAVEMENT |
| PVMT = TOP OF PAVEMENT |
| FL = FLOW LINE |
| XP = TRANSFORMER PAD |
| RC = ROLL CURB |

ISSUED FOR CONSTRUCTION

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NORTH CAROLINA PROFESSIONAL SEAL 048231 ENGINEER JACOB C. DOOLEY
06/09/2026

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DATE: 12/17/2025
DRAWN BY: 332
DESIGNED BY: J. DOOLEY
CHECKED BY: J. DOOLEY
SCALE: AS SHOWN

# TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

## CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC

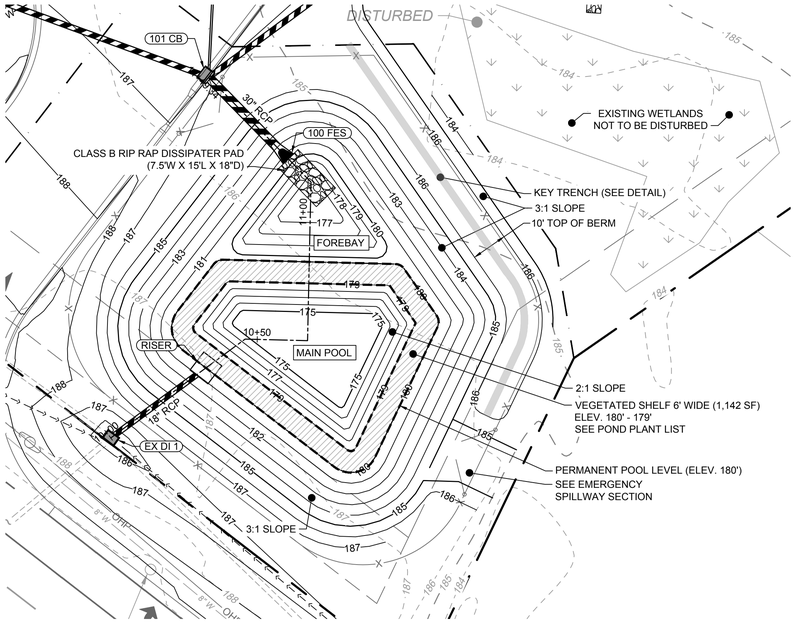
TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA

SPOT GRADING PLAN

JOB NO. 37630.232
SHEET NO. C3.1


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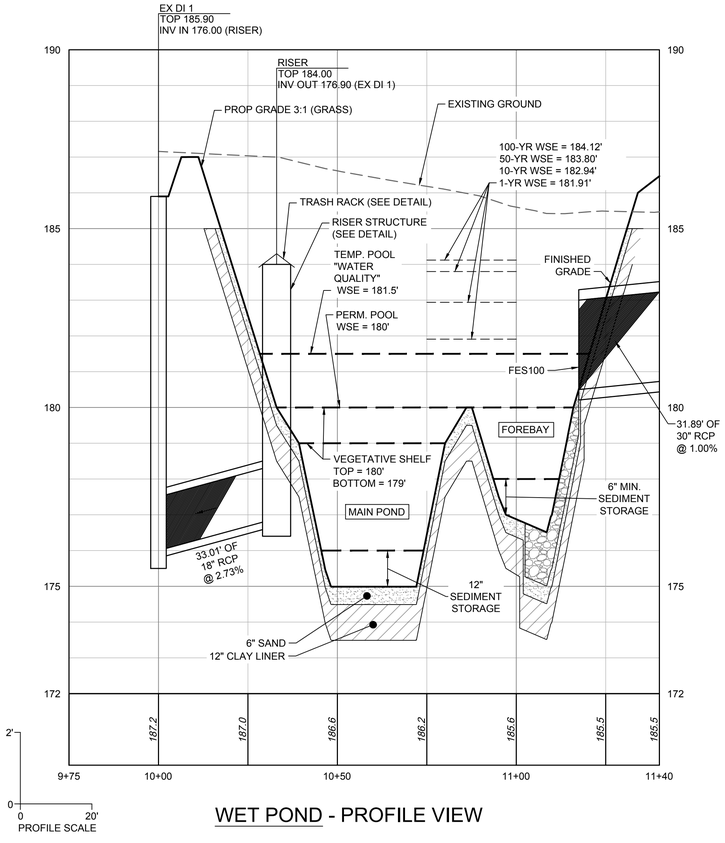

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WET POND - PLAN VIEW




SCALE 1"=20'
0 20' 40'




WET POND - PROFILE VIEW

## KEY TRENCH & CLAY LINER NOTES

1. THE ON-SITE GEOTECHNICAL ENGINEER SHALL INSPECT THE KEY TRENCH EXCAVATION PRIOR TO PLACEMENT OF ANY BACKFILL WITHIN THE KEY TRENCH.
2. THE CONTRACTOR WILL NEED TO INSTALL A CLAY LINER AND SAND LAYER A MINIMUM OF 1.5' BELOW THE LOWEST GRADE. THE CLAY LINER SHALL BE AT LEAST 12" THICK AND MEET THE FOLLOWING SPECIFICATIONS:
   - 2.1. UNIFIED SOIL CLASSIFICATION SYSTEM DESIGNATION OF CL, CH, ML
   - 2.2. MINIMUM PLASTICITY INDEX OF 12
   - 2.3. MINIMUM OF 2 TESTS OF EACH ABOVE PARAMETER SHALL BE COMPLETED BY THE CONTRACTOR ON THE LINER MATERIAL AND PRESENTED TO THE ON-SITE GEOTECHNICAL ENGINEER FOR APPROVAL. SHOULD THESE TESTS NOT MEET THE ABOVE REQUIREMENTS, THE ON-SITE GEOTECHNICAL ENGINEER MAY PROVIDE PERMEABILITY TESTING DEMONSTRATING AN INFILTRATION RATE OF NO MORE THAN 0.01 IN/HR
   - 2.4. COMPACTION TO A MINIMUM OF 95% PER ASTM D698 AND WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT (1 COMPACTION DENSITY TEST PER 2500 SQ. FT.)
   - 2.5. MAXIMUM INFILTRATION RATE OF 0.01 IN/HR.

   IF IT IS DETERMINED BY THE ON-SITE GEOTECHNICAL ENGINEER THAT A LINER IS NOT NEEDED, THEN A LETTER TO THE DESIGN ENGINEER CERTIFYING THE INFILTRATION RATE SHALL BE PROVIDED, WHICH WILL BE USED DURING THE AS-BUILT CERTIFICATION PROCESS.
3. A 6" SAND LAYER SHALL BE INSTALLED ON TOP OF THE CLAY LINER.
4. THE GRADES SHOWN ON THIS PLAN ARE FINISHED GRADES AND INCLUDE THE CLAY LINER & SAND LAYER.

## WET POND CONSTRUCTION SEQUENCE:

1. DO NOT BEGIN CONSTRUCTION OF WET POND AREAS UNTIL SITE CONSTRUCTION IS COMPLETE, ALL PARKING SURFACES ARE PAVED, AND THE ENTIRE SITE HAS AN ESTABLISHED WITH A GOOD STAND OF GRASS.
2. ALL EROSION SEDIMENT AND EROSION CONTROL PRACTICES SHALL BE IN PLACE AND THE SLOPES DRAINING TO THE WET POND AREA SHALL BE STABILIZED BEFORE CONSTRUCTION OF THE BIORETENTION BEGINS.
3. INSTALL TEMPORARY SILT FENCE AROUND THE WET POND AREA AS NEEDED.
4. EXCAVATE WET POND AREA, PER THE GRADES AND DETAILED ELEVATIONS SHOWN ON THE CONSTRUCTION PLANS.
5. CONTACT ENGINEER SO AN AS-BUILT SURVEY CAN BE PERFORMED OF THE WET POND.
6. INSTALL ANY REMAINING STORM DRAINAGE PIPES AND INLETS.
7. FINE GRADE THE SIDE SLOPES OF THE WET POND AREA. DRESS UP VELOCITY DISSIPATOR AS NEEDED PER THE PLANS.
8. INSTALL GRASS PER GRASS SPECIFICATIONS.
9. PLANT ALL PROPOSED VEGETATION PER WET POND PLANTING PLAN. CONTACT THE PROJECT LANDSCAPE ARCHITECT TO COORDINATE AS NEEDED.
10. FINE GRADE, SEED AND STABILIZE ANY REMAINING DISTURBED AREAS AROUND THE OUTSIDE OF THE WET POND AREA. REMOVE SILT FENCE.
11. UPON COMPLETION OF WORK, CONTACT THE PROJECT ENGINEER AND LANDSCAPE ARCHITECT FOR AN INSPECTION AND TO BEGIN THE AS-BUILT CERTIFICATION PROCESS. AN AS-BUILT SURVEY OF ALL ASPECTS OF THIS FACILITY WILL BE PERFORMED BY THE ENGINEER. CERTIFICATIONS WILL NOT BE ISSUED IF THE SCM DOES NOT MEET OR EXCEED THE REQUIREMENTS CONTAINED IN THE CONSTRUCTION DOCUMENTS. SHOULD REMEDIAL WORK BE REQUIRED, ALL COSTS ASSOCIATED WITH THE REMEDIAL WORK INCLUDING RE-SURVEY AND RE-INSPECTIONS WILL BE BORNE BY THE CONTRACTOR.

## DAM EMBANKMENT AND SOIL COMPACTION SPECIFICATIONS

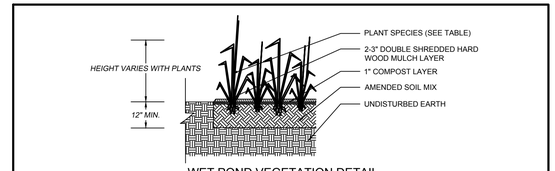
1. CONTROLLED FILL, AS SPECIFIED BY THE GEOTECHNICAL ENGINEER, IN THE DAM EMBANKMENT /KEY TRENCH SHALL BE PLACED IN 6-INCH LOOSE LAYERS (3-INCH LOOSE LAYERS WITHIN 3-FEET OF EITHER SIDE OF THE PRINCIPAL SPILLWAY PIPE TO A DEPTH OF 2-FEET OVER THE PIPE) AND SHALL BE COMPACTED TO A DENSITY OF NO LESS THAN 95% OF THE STANDARD PROCTOR MAXIMUM DENSITY AT A MOISTURE CONTENT OF + OR - TWO PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D698.
2. ALL VISIBLE ORGANIC DEBRIS SUCH AS ROOTS AND LIMBS SHALL BE REMOVED FROM THE FILL MATERIAL PRIOR TO COMPACTION TO THE REQUIRED DENSITY. SOILS WITH ORGANIC MATTER CONTENT EXCEEDING 5% BY WEIGHT SHALL NOT BE USED. STONES GREATER THAN 3-INCH (IN ANY DIRECTION) SHALL BE REMOVED FROM THE FILL PRIOR TO COMPACTION.
3. FILL MATERIAL PLACED AT DENSITIES LOWER THAN SPECIFIED MINIMUM DENSITIES OR AT MOISTURE CONTENTS OUTSIDE THE SPECIFIED RANGES OR OTHERWISE NOT CONFORMING TO SPECIFIED REQUIREMENTS SHALL BE REMOVED AND REPLACED WITH ACCEPTABLE MATERIALS.
4. ANY FILL LAYER THAT IS SMOOTH DRUM ROLLED TO REDUCE MOISTURE PENETRATION DURING A STORM EVENT SHALL BE PROPERLY SCARIFIED PRIOR TO THE PLACEMENT OF THE NEXT SOIL LIFT.
5. SURFACE WATER AND STREAM FLOW SHALL BE CONTINUOUSLY CONTROLLED THROUGHOUT CONSTRUCTION AND THE PLACEMENT OF CONTROLLED FILL.
6. FOUNDATION AREAS MAY REQUIRE UNDERCUTTING OF COMPRESSIBLE AND/OR UNSUITABLE SOILS IN ADDITION TO THAT INDICATED ON THE PLANS. ALL SUCH UNDERCUTTING SHALL BE PERFORMED AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER AND SHALL BE MONITORED AND DOCUMENTED. IN NO CASE SHALL THERE BE AN ATTEMPT TO STABILIZE ANY PORTIONS OF THE FOUNDATION SOILS WITH CRUSHED STONE.
7. TREATMENT OF SEEPAGE AREAS, SUBGRADE PREPARATION, FOUNDATION DEWATERING AND ROCK FOUNDATION PREPARATION (I.E., TREATMENT WITH SLUSH GROUTING, DENTAL CONCRETE, ETC.) MAY BE REQUIRED AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER. ALL SUCH ACTIVITIES SHALL BE CLOSELY MONITORED AND DOCUMENTED BY THE GEOTECHNICAL ENGINEER.
8. FILL ADJACENT TO THE RISER AND PRINCIPAL SPILLWAY PIPE SHALL BE PLACED SO THAT LIFTS ARE AT THE SAME LEVEL ON BOTH SIDES OF THE STRUCTURES.
9. EARTHWORK COMPACTION WITHIN 3-FEET OF ANY STRUCTURES SHALL BE ACCOMPLISHED BY MEANS OF HAND TAMPERS, MANUALLY DIRECTED POWER TAMPERS OR PLATE COMPACTORS OR MINIATURE SELF-PROPELLED ROLLERS.
10. COMPACTION BY MEANS OF DROP WEIGHTS FROM A CRANE OR HOIST SHALL NOT BE PERMITTED.
11. HEAVY EQUIPMENT SHALL NOT BE ALLOWED TO PASS OVER CAST-IN-PLACE STRUCTURES (INCLUDING THE CRADLE) UNTIL ADEQUATE CURING TIME HAS ELAPSED.
12. TO RE-ESTABLISH VEGETATION AFTER CONSTRUCTION, A 4-INCH LAYER OF TOPSOIL SHALL BE PLACED ON THE DISTURBED EMBANKMENT SURFACE AND THE AREA SEEDED AND MULCHED OR HYDROSEEDED.

## WET POND CONSTRUCTION NOTES:

1. SIDE SLOPES STABILIZED WITH VEGETATION SHALL BE NO STEEPER THAN 3:1.
2. THE WET POND SHALL BE STABILIZED WITHIN 14 DAYS OF CONSTRUCTION.
3. THE ON-SITE GEOTECHNICAL ENGINEER SHALL INSPECT THE KEY TRENCH EXCAVATION PRIOR TO PLACEMENT OF ANY BACKFILL WITHIN THE KEY TRENCH.
4. THE CONTRACTOR SHALL INSTALL A POND LINER AS DIRECTED BY THE ON-SITE GEOTECHNICAL ENGINEER.
   - 4.1. A SYNTHETIC LINER SHALL MEET OR EXCEED THE FOLLOWING SPECIFICATIONS:
     - 4.1.1. MATERIAL SHALL BE HDPE;
     - 4.1.2. MINIMUM THICKNESS OF 40 MIL;
     - 4.1.3. INSTALLED AND ANCHORED PER MANUFACTURES SPECIFICATIONS.
   - 4.2. A CLAY LINER SHALL MEET OR EXCEED THE FOLLOWING SPECIFICATIONS:
     - 4.1.1. LINER SHALL BE A MINIMUM OF 12" THICK;
     - 4.1.2. UNIFIED SOIL CLASSIFICATION SYSTEM DESIGNATION OF CL, CH, ML;
     - 4.1.3. MINIMUM PLASTICITY INDEX OF 12;
     - 4.1.4. MINIMUM OF 2 TESTS OF EACH ABOVE PARAMETER SHALL BE COMPLETED BY THE CONTRACTOR ON THE LINER MATERIAL AND PRESENTED TO THE ON-SITE GEOTECHNICAL ENGINEER FOR APPROVAL. SHOULD THESE TESTS NOT MEET THE ABOVE REQUIREMENTS, THE ON-SITE GEOTECHNICAL ENGINEER MAY PROVIDE PERMEABILITY TESTING DEMONSTRATING AN INFILTRATION RATE OF NO MORE THAN 0.01 IN/HR;
     - 4.1.5. COMPACTION TO A MINIMUM OF 95% PER ASTM D698 AND WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT (1 COMPACTION DENSITY TEST PER 2500 SQ. FT.);
     - 4.1.6. MAXIMUM INFILTRATION RATE OF 0.01 IN/HR.
5. THE POND LINER SHALL BE PLACED BENEATH THE ENTIRE BOTTOM OF WET POND TO MAINTAIN THE PERMANENT POOL AT THE DESIGN ELEVATION. INSTALL LINER UP TO THE SPILLWAY ELEVATION.
6. DUE TO HIGH WATER TABLE CONDITIONS, ON-SITE GEOTECHNICAL ENGINEER SHALL ACCOUNT FOR HYDROSTATIC PRESSURES WHEN SPECIFYING POND LINER.
7. THE GRADES SHOWN ON THIS PLAN ARE FINISHED GRADES AND INCLUDE THE CLAY LINER. AT LEAST FOUR INCHES OF TOPSOIL IS REQUIRED FOR BOTH LINED AND UNLINED WETLANDS. A SOIL ANALYSIS SHOULD BE CONDUCTED WITHIN THE STORMWATER FACILITY AREA TO ASSURE HEALTHY VEGETATION GROWTH AND TO PROVIDE ADEQUATE INFILTRATION RATES.
8. PRIOR TO CERTIFICATION, ALL PLANTINGS MUST BE IN PLACE; AS WELL AS A DENSE STAND OF NON-CLUMPING TURF GRASS ON ALL SLOPES, DAM, AND SPILLWAY. CONTRACTOR TO RE-SEED OR RE-SOD BARE SPOTS AS NEEDED AND INSTALL SLOPE STABILIZATION NETTING.

## WET POND CONVERSION SEQUENCE:

1. WET POND WILL INITIALLY BE INSTALLED AS A SKIMMER SEDIMENT BASIN. REFER TO GRADING PLAN AND WET POND SECTIONS AND DETAILS FOR FINAL STAGE. THE FINAL BASIN AND BERM GRADING SHOULD HAVE BEEN PERFORMED AS PART OF THE EROSION CONTROL PHASE 1 AND CONVERSION SHOULD ONLY REQUIRED REMOVAL OF SEDIMENT AND MINOR DRESS-UP WORK.
2. STABILIZE ALL AREAS TRIBUTARY TO THE WET DETENTION BASIN AND OBTAIN APPROVAL FROM THE JURISTDICTION INSPECTOR PRIOR TO BEGINNING THE CONVERSION.
3. LEAVE SKIMMER IN PLACE, REMOVE BAFFLES AND SEDIMENT FROM THE BOTTOM OF THE BASIN. FINE GRADE BERM AND VEGETATIVE SHELF AS REQUIRED.
4. INSTALL TRASH RACK, REMOVE SKIMMER, AND INSTALL PERMANENT ORIFICE PIPE AS SHOWN ON THE APPROVED PLANS.
5. INSTALL CLAY LINER, TOPSOIL, RIP-RAP, AND FILTER FABRIC.
6. REPAIR SPILLWAY LINER AS NEEDED AND SEED ALL DISTURBED AREAS.
7. ONCE FILTER STRIP HAS BEEN INSTALLED AND STABILIZED, INSTALL ADDITIONAL 4" PVC FITTING AND CONNECT THROUGH RISER TO OUTLET AT FILTER STRIP.
8. SUBMIT SURVEY CAD FILE WITH SPOT GRADES TO ENGINEER FOR REVIEW. CONTACT ENGINEER TO SCHEDULE INSPECTION.
9. MAKE ANY ADJUSTMENTS REQUIRED BY ENGINEER FOLLOWING INSPECTION AND REVIEW OF AS-BUILT SURVEY DATA.
10. CONVERSION OF THE SKIMMER BASIN TO A PERMANENT WET POND SHALL NOT BE CONSIDERED COMPLETE UNTIL THE FOLLOWING ITEMS HAVE BEEN COMPLETED:
    - BASIN HAS BEEN FULLY CONVERTED AND IS BUILT IN ACCORDANCE WITH THE APPROVED DESIGN, AS DETERMINED BY THE ENGINEER.
    - OPERATION & MAINTENANCE AGREEMENT IS COMPLETE.
    - JURISDICTION HAS PERFORMED AN INSPECTION AND APPROVED THE WET POND, AND THE AS-BUILTS.




WET POND VEGETATION DETAIL
N.T.S.

## WET POND VEGETATED SHELF PLANT LIST

MINIMUM REQUIRED PLANT DENSITY = 50 PLANTS PER 200 SQUARE FEET OF VEGETATED SHELF (1,142 SF / 200 SF) * 50 PLANTS = 286 MINIMUM PLANTS REQUIRED.

THE FOLLOWING PLANTS SHALL BE PLANTED ON THE 6-FOOT WIDE VEGETATED SHELF BETWEEN THE ELEVATIONS OF 180' - 179':

| QUANTITY | BOTANICAL NAME | COMMON NAME | SPACING | NOTES |
|---|---|---|---|---|
| 50 | EUPATORIADELPHUS FISTULOSUS | JOE PYE WEED | 4' O.C. | PLANT IN GROUPS OF 5 |
| 50 | LOBELIA SIPHILITICA | GREAT BLUE LOBELIA | 4' O.C. | PLANT IN GROUPS OF 5 |
| 50 | LOBELIA CARDINALIS | CARDINAL FLOWER | 4' O.C. | PLANT IN GROUPS OF 5 |
| 50 | EUPATORIADELPHUS MACULATUS | SPOTTED TRUMPETWEED | 4' O.C. | PLANT IN GROUPS OF 5 |
| 45 | ASCLEPIAS INCARNATA | SWAMP MILKWEED | 4' O.C. | PLANT IN GROUPS OF 5 |
| 45 | RHYNCHOSPORA COLORATA | STARRUSH PLUMEGRASS | 4' O.C. | PLANT IN GROUPS OF 5 |

NURSERY SOURCES:
MELLOW MARSH FARM (919) 742-1200
CURE NURSERY (919) 542-6186

ISSUED FOR CONSTRUCTION

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ERWIN, HARNETT COUNTY, NCDEQ, AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS


NORTH CAROLINA PROFESSIONAL SEAL 048231 ENGINEER JACOB C. DOOLEY
06/09/2026

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| DATE | REVISION DESCRIPTION |
|---|---|
| 03/02/2026 | NCDOT ROADWAY EXHIBIT SUBMITTAL #1 |
| 03/20/2026 | NCDEQ, NCDOT, TOWN OF ERWIN, HRW RESUBMITTALS |
| 04/29/2026 | HRW RESUBMITTAL |
| 05/20/2026 | NCDEQ SUBMITTAL |
| 06/09/2026 | HRW SUBMITTAL #4 |

DATE 12/17/2025
DRAWN BY 332
DESIGNED BY J. DOOLEY
CHECKED BY J. DOOLEY
SCALE AS SHOWN

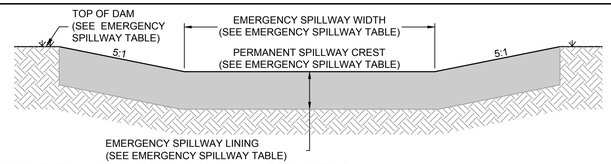
TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC
TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA
WET POND PLAN AND PROFILE

JOB NO. 37630.232
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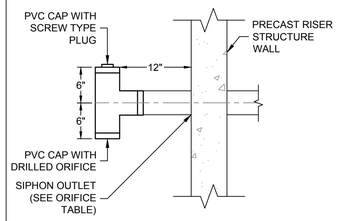
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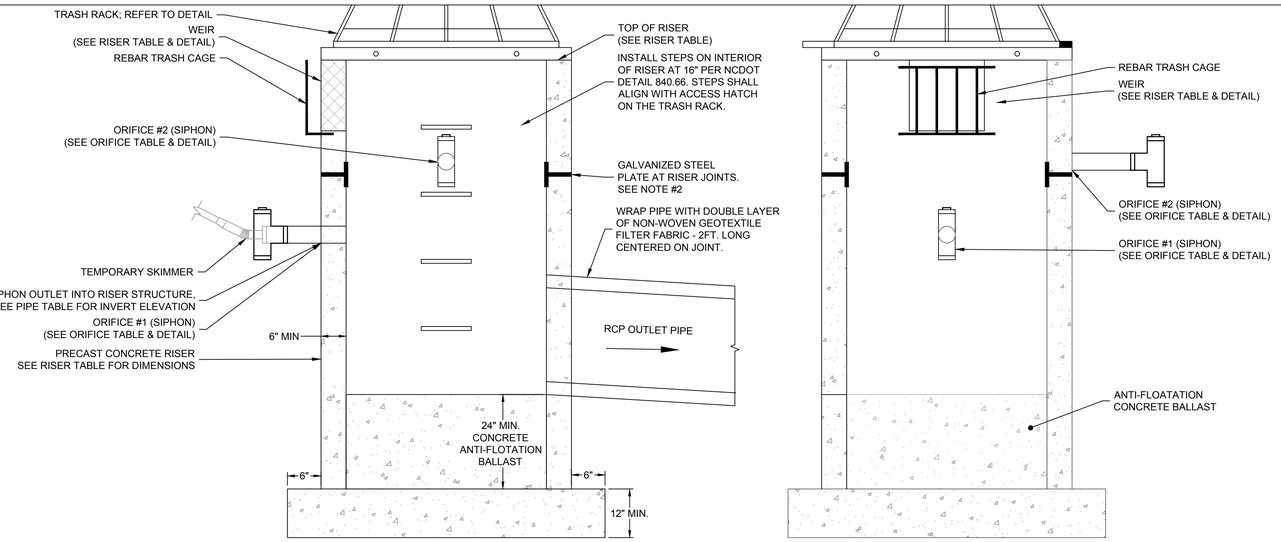

## EMERGENCY SPILLWAY SECTION

N.T.S.



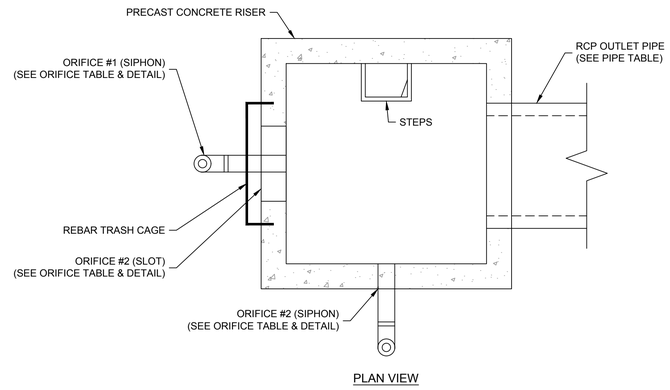

## SIPHON OUTLET #1 DETAIL

N.T.S.




## RISER DETAIL

N.T.S.

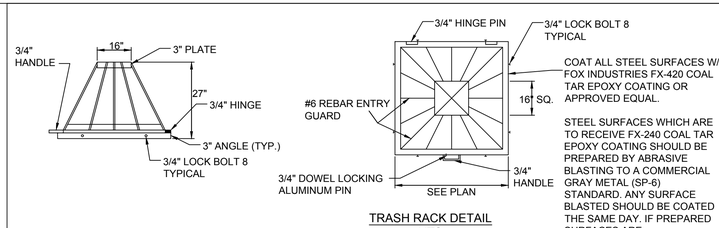



PLAN VIEW

N.T.S.

NOTES:

1. MANUFACTURER SHALL HAVE STRUCTURAL ENGINEER DESIGN CONCRETE REINFORCEMENT TO SUPPORT WEIGHT OF ANTI-FLOATATION BALLAST. REINFORCED CONCRETE STRENGTH SHALL BE 3,000 PSI MIN.
2. BOLT A GALVANIZED STEEL PLATE ACROSS EACH RISER JOINT IN (4) LOCATIONS (TYP.). PLATES SHALL BE 4" W X 8" L X ¼" TH. USE (4) ¾" X 3" GALVANIZED BOLTS AT EACH PLATE. USE WATERTIGHT JOINTS CONFORMING TO ASTM C1433.
3. TRASH RACK NOT SHOWN FOR CLARITY. REFER TO TRASH RACK DETAIL FOR TYPE AND INSTALLATION INFORMATION.



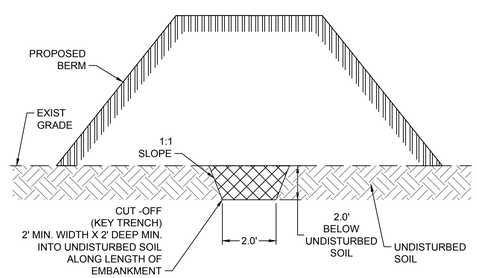

TRASH RACK DETAIL
NTS

COAT ALL STEEL SURFACES W/ FOX INDUSTRIES FX-420 COAL TAR EPOXY COATING OR APPROVED EQUAL.

STEEL SURFACES WHICH ARE TO RECEIVE FX-240 COAL TAR EPOXY COATING SHOULD BE PREPARED BY ABRASIVE BLASTING TO A COMMERCIAL GRAY METAL (SP-6) STANDARD. ANY SURFACE BLASTED SHOULD BE COATED THE SAME DAY. IF PREPARED SURFACES ARE CONTAMINATED BY RUST OR OTHER CONTAMINANTS, THEY MUST BE RE-BLASTED.

## TYP. TRASH RACK DETAIL

N.T.S.




## CUT-OFF TRENCH (KEY TRENCH) DETAIL

N.T.S.

### ORIFICE TABLE

| | SIZE | DRILLED ORIFICE SIZE | MATERIAL | INVERT ELEV. |
|---|---|---|---|---|
| ORIFICE #1 (SIPHON) | 6" | 1.00" | PVC SCH 40 | 180.00' |
| ORIFICE #2 (SIPHON) | 6" | 1.00" | PVC SCH 40 | 181.50' |

### RISER TABLE

| | INVERT ELEVATION | INTERIOR DIMENSIONS |
|---|---|---|
| TOP OF RISER | 184.00' | 48" X 48" |
| WEIR | 182.50' | 18" W X 18" T |
| CONCRETE ANTI-FLOTATION BALLAST | 176.90' (TOP) | N/A |
| CONCRETE BASE | 174.90' (TOP) | N/A |

### EMERGENCY SPILLWAY TABLE

| | |
|---|---|
| TOP OF BERM ELEVATION: | 186.00' |
| PERM. SPILLWAY CREST ELEVATION: | 185.00' |
| EMERGENCY SPILLWAY BASE WIDTH: | 15.00' |
| EMERGENCY SPILLWAY TOP WIDTH: | 25.00' |
| EMERGENCY SPILLWAY LINING: | NORTH AMERICAN GREEN P300 |

ISSUED FOR CONSTRUCTION

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NORTH CAROLINA PROFESSIONAL SEAL 048231 ENGINEER JACOB C. DOOLEY
06/09/2026

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DATE
12/17/2025

DRAWN BY
332

DESIGNED BY
J. DOOLEY

CHECKED BY
J. DOOLEY

SCALE
AS SHOWN

# TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC
TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA
WET POND DETAILS

JOB NO.
37630.232

SHEET NO.
C3.3

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## SKIMMER SEDIMENT BASIN MAINTENANCE

INSPECT SKIMMER SEDIMENT BASINS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE HEIGHT OF THE FIRST BAFFLE. PULL THE SKIMMER TO ONE SIDE SO THAT THE SEDIMENT UNDERNEATH IT CAN BE EXCAVATED. EXCAVATE THE SEDIMENT FROM THE ENTIRE BASIN, NOT JUST AROUND THE SKIMMER OR THE FIRST CELL. MAKE SURE VEGETATION GROWING IN THE BOTTOM OF THE BASIN DOES NOT HOLD DOWN THE SKIMMER. REPAIR BAFFLES IF THEY ARE DAMAGED, RE-ANCHOR THE BAFFLES IF WATER IS FLOWING UNDERNEATH OR AROUND THEM. IF THE SKIMMER IS CLOGGED WITH TRASH AND THERE IS WATER IN THE BASIN, USUALLY JERKING ON THE ROPE WILL MAKE THE SKIMMER BOB UP AND DOWN AND DISLODGE THE DEBRIS AND RESTORE FLOW. IF THIS DOES NOT WORK, PULL THE SKIMMER OVER TO THE SIDE OF THE BASIN AND REMOVE THE DEBRIS. ALSO CHECK THE ORIFICE INSIDE THE SKIMMER TO SEE IF IT IS CLOGGED; IF SO REMOVE THE DEBRIS. IF THE SKIMMER ARM OR BARREL IS CLOGGED, THE ORIFICE CAN BE REMOVED AND THE OBSTRUCTION CLEARED WITH A PLUMBER'S SNAKE OR BY FLUSHING WITH WATER. BE SURE AND REPLACE THE ORIFICE BEFORE REPOSITIONING THE SKIMMER. CHECK THE FABRIC LINED SPILLWAY FOR DAMAGE AND MAKE ANY REQUIRED REPAIRS WITH FABRIC THAT SPANS THE FULL WIDTH OF THE SPILLWAY. CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE SKIMMER AND POOL AREAS. FREEZING WEATHER CAN RESULT IN ICE FORMING IN THE BASIN. SOME SPECIAL PRECAUTIONS SHOULD BE TAKEN IN THE WINTER TO PREVENT THE SKIMMER FROM PLUGGING WITH ICE.

## BAFFLES MAINTENANCE

INSPECT BAFFLES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY. BE SURE TO MAINTAIN ACCESS TO THE BAFFLES. SHOULD THE FABRIC OF A BAFFLE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY. REMOVE SEDIMENT DEPOSITS WHEN IT REACHES HALF FULL, TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE BAFFLES. TAKE CARE TO AVOID DAMAGING THE BAFFLES DURING CLEANOUT, AND REPLACE IF DAMAGED DURING CLEANOUT OPERATIONS. SEDIMENT DEPTH SHOULD NEVER EXCEED HALF THE DESIGNED STORAGE DEPTH. AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED, REMOVE ALL BAFFLE MATERIALS AND UNSTABLE SEDIMENT DEPOSITS, BRING THE AREA TO GRADE, AND STABILIZE IT.

## GENERAL EROSION AND SEDIMENT CONTROL NOTES:

1. ALL CONSTRUCTION SHALL COMPLY WITH NCDEQ STANDARDS AND SPECIFICATIONS.
2. A COPY OF THE APPROVED EROSION CONTROL PLAN MUST BE ON FILE AT THE JOB SITE AT ALL TIMES.
3. FAILURE TO FOLLOW THE APPROVED PLAN SEQUENCE AND DETAILS COULD SUBJECT THE CONTRACTOR TO FINES AND PENALTIES ISSUED BY DEQ.
4. FIELD VERIFY ALL DIMENSIONS AND GRADES ON THESE PLANS PRIOR TO CONSTRUCTION. FAILURE TO NOTIFY THE OWNER OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH PLAN OR GRADE CHANGES, MAY RESULT IN NO EXTRA COMPENSATION PAID TO THE CONTRACTOR FOR ANY WORK DONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY.
5. EXCAVATION AND EARTH MOVING OPERATIONS SHALL BE CONDUCTED UNDER THE SUPERVISION OF THE GEOTECHNICAL ENGINEER.
6. VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. EXISTING UTILITIES SHOWN ARE FROM THE BEST AVAILABLE RECORDS AND FROM A SURVEY OF ABOVE GROUND FEATURES. NO WARRANTY IS GIVEN OR IMPLIED AS TO THE ACCURACY OF THE INFORMATION. ALL EXISTING UTILITIES SHOULD BE CONSIDERED APPROXIMATE IN LOCATION AND VERIFIED PRIOR TO COMMENCING ACTIVITY ON SITE.
7. ALL ADJACENT ROADS TO THE SITE ARE TO BE SWEPT AND WASHED AT THE END OF EACH WORK DAY TO ENSURE NO SEDIMENT COLLECTS ON THE ROADWAYS.
8. INSPECT AND PROPERLY MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES WEEKLY AND AFTER EVERY RAINFALL EVENT.
9. INSTALL ANY ADDITIONAL EROSION CONTROL MEASURES AS NECESSARY TO PREVENT SEDIMENT RUNOFF.
10. PROVIDE NCDEQ WITH THE LOCATION OF OFFSITE STOCKPILES USED TO STORE EXCAVATED SOIL FROM THE SITE. THE LOCATION OF OFFSITE STOCKPILES MUST BE AN UPLAND AREA. IF AN OFFSITE BORROW OR SPOIL SITE IS UTILIZED, THEN THE DISTURBED AREA FOR THE BORROW/SPOIL SITE MUST BE INCLUDED IN THE LAND DISTURBANCE PERMIT. THE CONTRACTOR WILL PROVIDE THE LOCATION OF ALL EXCAVATED SOILS USED FOR THIS PROJECT TO NCDEQ. THIS AREA MUST ALSO BE AN UPLAND AREA.
11. CONCRETE WASHOUT TO BE LOCATED A MINIMUM OF 50' FROM ANY DRAINAGE STRUCTURE.
12. THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS.
13. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER, ENFORCEMENT OFFICER, OR OTHER GOVERNING AGENCY.

## PHASE I EROSION CONTROL CONSTRUCTION SEQUENCE:

1. OWNER/DEVELOPER/CONTRACTOR SHALL OBTAIN A COPY OF THE APPROVED EROSION CONTROL PLAN AND MAINTAIN A COPY OF THE PLAN ON SITE THROUGHOUT DURATION OF CONSTRUCTION.
2. CONTRACTOR TO DIG A TEST PIT WITHIN THE LIMITS OF THE BOTTOM OF THE STORMWATER CONTROL MEASURE. CONTRACTOR TO HAVE A LICENSED SOIL SCIENTIST PERFORM AN INFILTRATION TEST AT THE BOTTOM ELEVATION OF THE SCM AND IMMEDIATELY REPORT THE INFILTRATION RATE TO THE ENGINEER.
3. OWNER/CONTRACTOR SHALL NOTIFY NCDEQ DEMLR (FAYETTEVILLE, NC) AT (910) 433-3300 A MINIMUM OF 72 HOURS BEFORE START OF CONSTRUCTION ON EACH PHASE.
4. INSTALL CONSTRUCTION ENTRANCES, TEMPORARY PIPE, SILT FENCE, SILT FENCE OUTLETS, AND TREE PROTECTION FENCING PER THE PLANS. CLEAR / DISTURB ONLY AS NECESSARY TO INSTALL THESE DEVICES.
5. INSTALL TEMPORARY DIVERSIONS, SEDIMENT BASIN, AND ALL OTHER MEASURES AS SHOWN ON THE APPROVED PLAN.
6. ADJUST EROSION AND SEDIMENT CONTROL MEASURES AS NECESSARY FOR PROPER OPERATION. INSTALL ADDITIONAL EROSION CONTROL MEASURES IF DETERMINED NECESSARY BY INSPECTOR.
7. INSPECT ALL EROSION CONTROL DEVICES AFTER EVERY RAINFALL EVENT AND AT LEAST ONCE PER WEEK. REPAIR AND CLEAN OUT AS REQUIRED.
8. NOTIFY NCDEQ DEMLR (FAYETTEVILLE, NC) AT (910) 433-3300 FOR AN INSPECTION AFTER THIS IS COMPLETED.
9. PROCEED TO PHASE 2 OF THE EROSION CONTROL SEQUENCE WHEN PHASE 1 MEASURES HAVE BEEN COMPLETED, INSPECTED, AND APPROVED.

## NOTES:

- STABILIZE LOWER PERIMETER UPON SEDIMENT BASIN CONSTRUCTION COMPLETION.
- MAINTAIN SILT FENCE AROUND THE ENTIRE PROJECT PERIMETER AREA WITH SILT FENCE OUTLETS AT THE LOW POINTS IN THIS PHASE.
- THE NPDES CONSTRUCTION PERMIT REQUIRES EROSION CONTROL DEVICES AND STORM WATER OUTFALLS BE INSPECTED WEEKLY (EVERY 7 CALENDAR DAYS) AND WITHIN 24 HRS OF A .5 INCH RAIN EVENT. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT THESE INSPECTIONS AND MAINTAIN RECORDS UNTIL THE AREA HAS STABILIZED, EVIDENT BY 95% VEGETATIVE GROWTH FOR AREAS PROVIDED SEEDING. TO FACILITATE RAINFALL MONITORING A RAIN GAUGE IS REQUIRED TO BE ON SITE. ADDITIONALLY THE CONTRACTOR IS RESPONSIBLE FOR CONDUCTING "SELF INSPECTIONS" INDICATING THE DATE BMPS ARE INSTALLED AND STABILIZATION MEASURES (SEEDING/MULCHING OR SOD) ARE INITIATED. THE "SELF INSPECTION" REPORTS WILL BE MAINTAINED ALONG WITH THE "NPDES" INSPECTION REPORTS. ONCE STABILIZATION HAS BEEN ACCOMPLISHED INSPECTION RECORDS ARE TO BE FORWARDED TO EAD AND ALL TEMPORARY EROSION/SEDIMENTATION CONTROL DEVICES REMOVED. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING COMPLIANCE WITH ALL PERMITS AND PLANS, ANY CHANGES WILL BE APPROVED BY THE STATE PRIOR TO EXECUTION. A COPY OF THE EROSION AND SEDIMENTATION CONTROL PLAN, LETTER OF APPROVAL, AND NPDES CONSTRUCTION PERMIT WILL BE MAINTAINED BY THE CONTRACTOR AT THE ONSITE OFFICE. IF SOIL IS REMOVED FROM OR BROUGHT ONSITE, THE APPLICABLE SOLID WASTE MANAGEMENT PERMIT NUMBER, EROSION SEDIMENTATION PERMIT NUMBER OR MINE PERMIT NUMBER WILL BE DISCLOSED.

## EROSION CONTROL PLAN - PHASE I KEYNOTES

| NUMBER | DESCRIPTION |
|---|---|
| EC101 | LIMITS OF DISTURBANCE |
| EC102 | SILT FENCE; REFER TO DETAIL (TYP). |
| EC103 | SILT FENCE OUTLET; REFER TO DETAIL (TYP.) |
| EC104 | TEMPORARY 25' X 100' CONSTRUCTION ENTRANCE; REFER TO DETAIL |
| EC105 | TEMPORARY INLET PROTECTION; REFER TO DETAIL (TYP.) |
| EC106 | SKIMMER SEDIMENT BASIN #1<br>DRAINAGE AREA=4.25 AC; DIST AREA=3.07 AC<br>REQ'D SURFACE AREA=3,824 SF; REQ'D STORAGE=5,526 CF<br>PROV'D SURFACE AREA=8,114 SF; PROV'D STORAGE=29,237 CF<br>(OR EQUIVALENT SURFACE AREA & VOLUME)<br>PROVIDE 2" SKIMMER W/ 1.25" DIA. ORIFICE ON 4'X4'X1'D CLASS B PAD; INV=180' |
| EC107 | TEMP. DIVERSION DITCH #1<br>LENGTH = 419'; DRAINAGE AREA = 0.45 AC; S = 1.4%<br>Q10 = 1.10 CFS; V10 = 2.28 FPS<br>D10 = 0.50'; T = 0.45 #/SF<br>USE 0.50' FBD' 1.00' DEEP W/ 3:1 SIDES<br>LINE W/ N. AMERICAN GREEN (S75) |
| EC108 | TEMP. DIVERSION DITCH #2<br>LENGTH = 405'; DRAINAGE AREA = 3.38 AC; S = 1.7%<br>Q10 = 8.00 CFS; V10 = 4.35 FPS<br>D10 = 1.00'; T = 1.07 #/SF<br>USE 0.50' FBD' 1.5' DEEP W/ 3:1 SIDES<br>LINE W/ N. AMERICAN GREEN (S75) |
| EC109 | 3 POROUS BAFFLES |
| EC110 | 15' WIDE SPILLWAY W/ CLASS B RIPRAP & NON-WOVEN LINER OR 50 MIL HEAVY DUTY SILVER TARP |
| EC111 | 3:1 SIDE SLOPE |
| EC112 | TREE PROTECTION FENCE. REFER TO DETAIL (TYP.) |
| EC113 | TEMPORARY STOCKPILE AREA |
| EC114 | CONCRETE WASHOUT |
| EC115 | ROCK PIPE INLET PROTECTION; REFER TO DETAIL |
| EC116 | CLASS A RIP RAP DISSIPATER PAD (6'W X 4'L X 12"D) |
| EC117 | CLASS B RIP RAP DISSIPATER PAD (10'W X 18'L X 18"D) |
| EC118 | 40 LF OF TEMPORARY 15" RCP |
| EC119 | SKIMMER; REFER TO DETAIL |

LIMITS OF DISTURBANCE = 4.5 ACRES

## EROSION CONTROL LEGEND

EXISTING CONTOURS
PROPOSED CONTOURS
TPF TPF TREE PROTECTION FENCE
LOD LIMITS OF DISTURBANCE
STOCKPILE AREA
SF SF SF SILT FENCE
SF/TPF SF/TPF SILT/TREE PROTECTION COMBINATION FENCE
POROUS BAFFLE
TEMPORARY DIVERSION DITCH
CLEAN WATER DIVERSION DITCH
SILT FENCE STONE OUTLET
EMERGENCY SPILLWAY / RIP RAP APRON
CHECK DAM
CONSTRUCTION ENTRANCE
TEMPORARY INLET PROTECTION
TEMPORARY DOUBLE INLET PROTECTION
W CONCRETE WASHOUT
WATTLE
HORSESHOE INLET PROTECTION
SKIMMER

SCALE 1"=30'
0 30' 60'
NAD 83

ISSUED FOR CONSTRUCTION

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ERWIN, HARNETT COUNTY, NCDEQ, AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 048231 JACOB C. DOOLEY
06/09/2026

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|---|---|
| 03/02/2026 | NCDOT ROADWAY EXHIBIT SUBMITTAL #1 |
| 03/20/2026 | NCDEQ, NCDOT, TOWN OF ERWIN, HRW RESUBMITTALS |
| 04/29/2026 | HRW RESUBMITTAL |
| 05/20/2026 | HRW RESUBMITTAL |
| 06/09/2026 | HRW SUBMITTAL #4 |

DATE 12/17/2025
DRAWN BY 332
DESIGNED BY J. DOOLEY
CHECKED BY J. DOOLEY
SCALE AS SHOWN

# TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC
TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA
EROSION CONTROL PLAN - PHASE 1

JOB NO. 37630.232
SHEET NO. C4.0

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## PERMANENT DITCH SUMMARY TABLE

| DITCH NAME | MIN. TOP WIDTH (FT) | MIN. DITCH DEPTH (FT) | MIN. BOTTOM WIDTH (FT) | SIDE SLOPE | LINER TYPE |
|---|---|---|---|---|---|
| PDD1 | 7 | 1 | 1 | 3:1 | CURLED MAT |
| PDD2 | 7.5 | 1.25 | 0 | 3:1 | NORTH AMERICAN GREEN, S75 |
| PDD3 | 6 | 1 | 0 | 3:1 | CURLED MAT |
| PDD4 | 20 | 1 | 0 | 10:1 | CURLED MAT |
| PDD5 | 30 | 3 | 0 | 5:1 | NORTH AMERICAN GREEN, S75 |
| PDD6 | 6 | 1 | 0 | 3:1 | NORTH AMERICAN GREEN, S75 |

## PHASE II EROSION CONTROL CONSTRUCTION SEQUENCE:

1. MAINTAIN ALL EXISTING EROSION CONTROL FEATURES PREVIOUSLY CONSTRUCTED AND ASSOCIATED WITH PHASE 2 EROSION CONTROL.
2. CONTINUE BRINGING FILL INTO THE SITE. IMPORTED MATERIAL WILL REQUIRE A PERMITTED SITE APPROVAL BEFORE THIS PROCESS BEGINS. ALL FILL SHALL BE BROUGHT INTO THE SITE AND EVENLY SPREAD OUT THROUGH THE SITE AS SHOWN IN LIFTS OF NO MORE THAT 1.0' AT A TIME. FILL SHALL BE ROLL COMPACTED BY A DOZER OR EQUIVALENT AS IT IS PLACED.
3. AFTER THE SEDIMENT BASIN IS CONSTRUCTED, CONTINUE INSTALLING STORM DRAINAGE SYSTEM FROM OUTLET POINT (LOW END) AND WORK UPSTREAM. PIPE INLET PROTECTION SHALL BE UTILIZED AT THE END OF EACH WORK DAY TO ASSURE PIPE NETWORK IS NOT INUNDATED WITH SEDIMENT.
4. INSTALL SITE IMPROVEMENTS, STORMWATER DRAINAGE SYSTEM, UTILITY SERVICES, SIDEWALKS AND DRIVES AS SHOWN ON THE APPROVED PLANS. ALL OPEN TRENCHES FOR UTILITY AND STORMWATER INSTALLATION SHALL BE PROTECTED FROM SEDIMENTATION BY PILING EXCAVATED MATERIAL ON THE UPHILL SIDE OF EXCAVATION.
5. INSTALL ADEQUATE EROSION AND SEDIMENT CONTROL MEASURES AND/OR INCREASE MAINTENANCE FREQUENCY WHERE APPROVED MEASURES FAIL TO PREVENT ACCELERATED EROSION, OFF-SITE SEDIMENTATION, OR REPETITIVE NON-COMPLIANCE ISSUES. ALL MEASURES MUST BE INSTALLED PER PLAN DETAIL. ENSURE CONSTRUCTION TRAFFIC IS LIMITED TO THE CONSTRUCTION ENTRANCE ONLY.
6. GROUND COVER SHALL BE PROVIDED AS FOLLOWS:
   - FOR ALL AREAS OF MODERATE AND/OR STEEP SLOPES, PROVIDE TEMPORARY GROUND COVER IF THE SLOPE HAS NOT BEEN DISTURBED FOR A PERIOD OF FOURTEEN (14) DAYS. SLOPES GREATER THAN 3:1 REQUIRE GROUND COVER IN 7 DAYS.
   - PROVIDE GROUND COVER SUFFICIENT TO RESTRAIN EROSION ON ANY PORTION OF THE SITE UPON WHICH FURTHER LAND-DISTURBING ACTIVITY IS NOT BEING UNDERTAKEN WITHIN FOURTEEN (14) CALENDAR DAYS OF TEMPORARILY OR PERMANENTLY SUSPENDING LAND DISTURBING ACTIVITY.
   - ESTABLISH PERMANENT GROUND COVER SUFFICIENT TO RESTRAIN EROSION WITHIN FOURTEEN (14) CALENDAR DAYS FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT AND/OR PRIOR TO FINAL INSPECTION.
8. INSTALL CURB & GUTTER AND GRAVEL BASE.
9. MODIFICATIONS TO THE APPROVED AND PERMITTED PLANS SHALL BE APPROVED BY EROSION CONTROL INSPECTIONS PRIOR TO REMOVAL OR INSTALLATION. CONTACT THE EROSION CONTROL INSPECTOR TO OBTAIN SIGN-OFF ON THE PLANS.
10. MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES IN GOOD WORKING ORDER. SILT FENCE, INLET PROTECTION, AND OTHER SIMILAR MEASURES MUST BE CLEANED OUT BEFORE THEY ARE HALF FULL. CLOGGED STONE FILTERS MUST BE REFRESHED/REPLACED. SILT FENCE CAN NOT HAVE HOLES OR TEARS.
11. ONCE GRADING IS COMPLETE, ALL UTILITIES, AND ALL STORM SYSTEMS ARE INSTALLED AND THE SITE IS COMPLETELY STABILIZED PER THE NPDES PLAN AND ABOVE, CONVERT THE SEDIMENT BASIN TO A STORMWATER INFILTRATION BASIN AS FOLLOWS:
    - CONSULT WITH THE EROSION AND SEDIMENT CONTROL INSPECTOR PRIOR TO BEGINNING THE CONVERSION FROM SEDIMENT BASIN TO INFILTRATION BASIN.
    - PUMP DOWN BASIN - USE APPROVED DEWATERING MEASURES. EFFLUENT MUST BE FILTERED.
    - REMOVE ACCUMULATED SEDIMENT (AS NEEDED) TO ESTABLISH THE FINAL GRADE OF THE POND. SEDIMENT MUST BE DISPOSED OF IN AN APPROVED AREA.
    - REMOVE TEMPORARY SKIMMER AND BAFFLES.
    - REMOVE TEMPORARY ORIFICE PLUGS FROM RISER AND CLOSE RISER DRAIN.
    - INSTALL PERFORATION IN DRAIN PIPE PER DETAIL.
    - ACCURATELY FINE GRADE BASIN TO DESIGN CONTOURS. CONTRACTOR TO SURVEY TO VERIFY ALL GRADES.
    - INSTALL SAND LAYER AND OBSERVATION PORT.
    - INSTALL FOREBAY BERMS AND RIPRAP.
    - INSTALL PLANTINGS, SOD, MULCH, ETC. AS SHOWN ON APPROVED PLAN.
12. CONTRACTOR TO HAVE A LICENSED SOIL SCIENTIST PERFORM AN INFILTRATION TEST AT THE BOTTOM ELEVATION OF THE SCM AND IMMEDIATELY REPORT THE INFILTRATION RATE TO THE ENGINEER.
13. AT A MINIMUM OF SEVEN (7) DAYS PRIOR TO SCHEDULING THE STORMWATER FINAL INSPECTION, SUBMIT ANY REQUIRED PAPERWORK TO THE EROSION CONTROL INSPECTORS FOR APPROVAL. FAILURE TO DO SO WILL PREVENT A CERTIFICATE OF OCCUPANCY FROM BEING ISSUED.
14. ONCE THE STORMWATER FINAL INSPECTION IS APPROVED, CLOSE THE GRADING PERMIT AND OBTAIN A CERTIFICATE OF COMPLETION.

## EROSION CONTROL PLAN - PHASE II KEYNOTES

| NUMBER | DESCRIPTION |
|---|---|
| EC201 | LIMITS OF DISTURBANCE |
| EC202 | SILT FENCE; REFER TO DETAIL (TYP.) |
| EC203 | SILT FENCE OUTLET; REFER TO DETAIL (TYP.) |
| EC204 | TREE PROTECTION FENCE. REFER TO DETAIL (TYP.) |
| EC205 | TEMPORARY 25' X 100' CONSTRUCTION ENTRANCE; REFER TO DETAIL |
| EC206 | TEMPORARY INLET PROTECTION; REFER TO DETAIL |
| EC207 | SKIMMER SEDIMENT BASIN #1<br>BASIN TO BE CONVERTED TO A WET POND AFTER CONSTRUCTION AND SITE STABILIZATION |
| EC208 | 3 POROUS BAFFLES |
| EC209 | 3:1 SIDE SLOPE;<br>STABILIZE W/ NORTH AMERICAN GREEN (S75) MATTING |
| EC210 | SOIL STOCKPILE AREA |
| EC211 | ROCK PIPE INLET PROTECTION; REFER TO DETAIL |
| EC212 | RIP RAP DISSIPATION PAD; REFER TO GRADING PLAN FOR SIZING |
| EC213 | PERMANENT DITCH; REFER TO PERMANENT DITCH SUMMARY TABLE FOR DIMENSIONS AND LINER INFORMATION |

LIMITS OF DISTURBANCE = 4.5 ACRES

## EROSION CONTROL LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- TPF — TREE PROTECTION FENCE
- LOD — LIMITS OF DISTURBANCE
- STOCKPILE AREA
- SF — SILT FENCE
- SF/TPF — SILT/TREE PROTECTION COMBINATION FENCE
- POROUS BAFFLE
- TEMPORARY DIVERSION DITCH
- CLEAN WATER DIVERSION DITCH
- SILT FENCE STONE OUTLET
- EMERGENCY SPILLWAY / RIP RAP APRON
- CHECK DAM
- CONSTRUCTION ENTRANCE
- TEMPORARY INLET PROTECTION
- TEMPORARY DOUBLE INLET PROTECTION
- W — CONCRETE WASHOUT
- WATTLE
- HORSESHOE INLET PROTECTION
- SKIMMER

ISSUED FOR CONSTRUCTION

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ERWIN, HARNETT COUNTY, NCDEQ, AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

SCALE 1"=30'
0 30' 60'

NAD 83


NORTH CAROLINA PROFESSIONAL SEAL 048231 ENGINEER JACOB C. DOOLEY
06/09/2026

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| NCDOT ROADWAY EXHIBIT SUBMITTAL #1 | 03/02/2026 |
| NCDEQ, NCDOT, TOWN OF ERWIN, HRVI RESUBMITTALS | 03/20/2026 |
| HRVI RESUBMITTAL | 04/29/2026 |
| HRVI SUBMITTAL | 05/20/2026 |
| HRVI SUBMITTAL #4 | 06/09/2026 |

DATE 12/17/2025
DRAWN BY 332
DESIGNED BY J. DOOLEY
CHECKED BY J. DOOLEY
SCALE AS SHOWN

# TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC

TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA

EROSION CONTROL PLAN - PHASE 2

JOB NO. 37630.232

SHEET NO. C4.1


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**GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT**

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

**SECTION E: GROUND STABILIZATION**

| Required Ground Stabilization Timeframes | | |
|---|---|---|
| **Site Area Description** | **Stabilize within this many calendar days after ceasing land disturbance** | **Timeframe variations** |
| (a) Perimeter dikes, swales, ditches, and perimeter slopes | 7 | None |
| (b) High Quality Water (HQW) Zones | 7 | None |
| (c) Slopes steeper than 3:1 | 7 | If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed |
| (d) Slopes 3:1 to 4:1 | 14 | -7 days for slopes greater than 50' in length and with slopes steeper than 4:1<br>-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones<br>-10 days for Falls Lake Watershed |
| (e) Areas with slopes flatter than 4:1 | 14 | -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones<br>-10 days for Falls Lake Watershed unless there is zero slope |

**Note:** After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

**GROUND STABILIZATION SPECIFICATION**

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

| Temporary Stabilization | Permanent Stabilization |
|---|---|
| • Temporary grass seed covered with straw or other mulches and tackifiers<br>• Hydroseeding<br>• Rolled erosion control products with or without temporary grass seed<br>• Appropriately applied straw or other mulch<br>• Plastic sheeting | • Permanent grass seed covered with straw or other mulches and tackifiers<br>• Geotextile fabrics such as permanent soil reinforcement matting<br>• Hydroseeding<br>• Shrubs or other permanent plantings covered with mulch<br>• Uniform and evenly distributed ground cover sufficient to restrain erosion<br>• Structural methods such as concrete, asphalt or retaining walls<br>• Rolled erosion control products with grass seed |

**POLYACRYLAMIDES (PAMS) AND FLOCCULANTS**

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

**EQUIPMENT AND VEHICLE MAINTENANCE**

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

**LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE**

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

**PAINT AND OTHER LIQUID WASTE**

1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

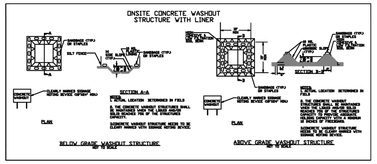
**PORTABLE TOILETS**

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

**EARTHEN STOCKPILE MANAGEMENT**

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.

NORTH CAROLINA *Environmental Quality*




**CONCRETE WASHOUTS**

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

**HERBICIDES, PESTICIDES AND RODENTICIDES**

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

**HAZARDOUS AND TOXIC WASTE**

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

# NCG01 GROUND STABILIZATION AND MATERIALS HANDLING | EFFECTIVE: 04/01/19

**PART III**
**SELF-INSPECTION, RECORDKEEPING AND REPORTING**

**SECTION A: SELF-INSPECTION**

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

| Inspect | Frequency (during normal business hours) | Inspection records must include: |
|---|---|---|
| (1) Rain gauge maintained in good working order | Daily | Daily rainfall amounts.<br>If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un-attended days (anc this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division. |
| (2) E&SC Measures | At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours | 1. Identification of the measures inspected,<br>2. Date and time of the inspection,<br>3. Name of the person performing the inspection,<br>4. Indication of whether the measures were operating properly,<br>5. Description of maintenance needs for the measure,<br>6. Description, evidence, and date of corrective actions taken. |
| (3) Stormwater discharge outfalls (SDOs) | At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours | 1. Identification of the discharge outfalls inspected,<br>2. Date and time of the inspection,<br>3. Name of the person performing the inspection,<br>4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration,<br>5. Indication of visible sediment leaving the site,<br>6. Description, evidence, and date of corrective actions taken. |
| (4) Perimeter of site | At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours | If visible sedimentation is found outside site limits, then a record of the following shall be made:<br>1. Actions taken to clean up or stabilize the sediment that has left the site limits,<br>2. Description, evidence, and date of corrective actions taken, and<br>3. An explanation as to the actions taken to control future releases. |
| (5) Streams or wetlands onsite or offsite (where accessible) | At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours | If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made:<br>1. Description, evidence and date of corrective actions taken, and<br>2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit. |
| (6) Ground stabilization measures | After each phase of grading | 1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover).<br>2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible. |

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

**PART III**
**SELF-INSPECTION, RECORDKEEPING AND REPORTING**

**SECTION B: RECORDKEEPING**

**1. E&SC Plan Documentation**

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

| Item to Document | Documentation Requirements |
|---|---|
| (a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan. | Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation. |
| (b) A phase of grading has been completed. | Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase. |
| (c) Ground cover is located and installed in accordance with the approved E&SC plan. | Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications. |
| (d) The maintenance and repair requirements for all E&SC measures have been performed. | Complete, date and sign an inspection report. |
| (e) Corrective actions have been taken to E&SC measures. | Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action. |

**2. Additional Documentation to be Kept on Site**

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This General Permit as well as the Certificate of Coverage, after it is received.

(b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

**3. Documentation to be Retained for Three Years**

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

**PART III**
**SELF-INSPECTION, RECORDKEEPING AND REPORTING**

**SECTION C: REPORTING**

**1. Occurrences that Must be Reported**

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(d) Anticipated bypasses and unanticipated bypasses.

(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

**2. Reporting Timeframes and Other Requirements**

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

| Occurrence | Reporting Timeframes (After Discovery) and Other Requirements |
|---|---|
| (a) Visible sediment deposition in a stream or wetland | • ***Within 24 hours,*** an oral or electronic notification.<br>• ***Within 7 calendar days,*** a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis.<br>• If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions. |
| (b) Oil spills and release of hazardous substances per Item 1(b)-(c) above | • ***Within 24 hours,*** an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release. |
| (c) Anticipated bypasses [40 CFR 122.41(m)(3)] | • ***A report at least ten days before the date of the bypass, if possible.*** The report shall include an evaluation of the anticipated quality and effect of the bypass. |
| (d) Unanticipated bypasses [40 CFR 122.41(m)(3)] | • ***Within 24 hours,*** an oral or electronic notification.<br>• ***Within 7 calendar days,*** a report that includes an evaluation of the quality and effect of the bypass. |
| (e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(l)(7)] | • ***Within 24 hours,*** an oral or electronic notification.<br>• ***Within 7 calendar days,*** a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6).<br>• Division staff may waive the requirement for a written report on a case-by-case basis. |

**PART II, SECTION G, ITEM (4)**
**DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT**

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

NORTH CAROLINA *Environmental Quality*

# NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING | EFFECTIVE: 04/01/19

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ISSUED FOR CONSTRUCTION

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ERWIN, HARNETT COUNTY, NCDEQ, AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 048231 ENGINEER JACOB C. DOOLEY
06/09/2026


THIS DRAWING PREPARED AT THE
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| REVISION DESCRIPTION | DATE |
|---|---|
| NCDOT ROADWAY EXHIBIT SUBMITTAL #1 | 03/02/2026 |
| NCDEQ, NCDOT, TOWN OF ERWIN, HRVF RESUBMITTALS | 03/20/2026 |
| HRVF RESUBMITTAL | 04/29/2026 |
| NCDOT, NCDEQ SUBMITTAL | 05/07/2026 |
| HRVF SUBMITTAL #4 | 06/09/2026 |

DATE 12/17/2025
DRAWN BY 332
DESIGNED BY J. DOOLEY
CHECKED BY J. DOOLEY
SCALE AS SHOWN

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC
TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA
NPDES DETAILS

JOB NO. 37630.232
SHEET NO. C4.2


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| WATER AND SEWER DEMANDS | |
|---|---|
| WASTEWATER DEMAND RATES: | GAS STATION - 250 GAL / PLUMBING FIXTURE |
| PLUMBING FIXTURES: | |
| TOTAL PROJECT DEMAND | |

## UTILITY NOTES

1. CONTRACTOR SHALL HAVE NORTH CAROLINA ONE CALL (811) LOCATE ALL EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
2. ALL UNDERGROUND FEATURES INDICATED ON THE PLANS SHOULD BE CONSIDERED APPROXIMATE IN LOCATION AND SHOULD BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION. NOTIFY THE DESIGN ENGINEER IMMEDIATELY IF ANY CONFLICTS OR DISCREPANCIES ARE NOTED.
3. CONTRACTOR SHALL COORDINATE THE LOCATION OR RELOCATION OF ALL OVERHEAD AND UNDERGROUND COMMUNICATION LINES, ELECTRIC AND GAS SERVICE WITH THE APPROPRIATE UTILITY COMPANY AND/OR THE CITY PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR SHALL PROVIDE CONDUITS AS REQUIRED FOR THESE UTILITIES UNDER PAVED AREAS.
4. ALL ILLUSTRATED UTILITY INFRASTRUCTURE IS DIAGRAMMATIC AND MAY NOT REPRESENT THE ACTUAL SIZE OF INFRASTRUCTURE. NOTIFY THE DESIGN ENGINEER IMMEDIATELY IF ANY CONFLICTS OR DISCREPANCIES ARE NOTED.
5. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF ERWIN, HARNETT REGIONAL WATER AND THE STATE OF NORTH CAROLINA STANDARDS AND SPECIFICATIONS.
6. SERVICE SADDLES SHALL BE ALL BRONZE WITH DOUBLE BRONZE STRAPS WITH A NEOPRENE "O" RING GASKET ATTACHED TO THE BODY.
7. A 3' CLEAR SPACE SHALL BE MAINTAINED AROUND ALL WATER METERS.
8. UTILITY TRENCHES SHALL BE CUT AND PAVEMENT REPAIRED TO NCDOT STANDARDS.
9. ALL DISTURBED HARDSCAPE AND LANDSCAPING (CONCRETE, ASPHALT, BRICK, TREES, SHRUBS, ETC) SHALL BE REPLACED ACCORDING TO TOWN OF ERWIN AND NCDOT STANDARDS AND SPECIFICATIONS.
10. BOUNDARY AND SURVEY INFORMATION IS TAKEN FROM A SURVEY BY PROFESSIONAL LAND SURVEYORS, PLLC DATED JULY 28, 2025.
11. ALL OVERHEAD UTILITY LINES SHALL BE ADJUSTED TO MAINTAIN ACCEPTABLE CLEARANCES FOR FIRE APPARATUS, CONSTRUCTION EQUIPMENT, AND VEHICULAR ACCESS.
12. THE PUMP STATION IS DESIGNED OR A CONVENIENCE STORE WITH FOOD PREP DISCHARGIN A FLOW RATE OF 60 GPD/100 SF * 3,965 SF = **2,374 GPD AVERAGE FLOW**. A 4.0 PEAKING FACTOR HAS BEEN APPLIED, RESULTING IN AN ESTIMATED **6.59 GALLONS PER MINUTE (GPM)** PEAK INFLUENT RATE.
13. THE PUMP STATION WILL OPERATE AT 29.6 GPM WITH A TOTAL DYNAMIC HEAD (TDH) OF 21.4 FT.

## UTILITY PLAN KEYNOTES

| NUMBER | DESCRIPTION |
|---|---|
| CU01 | CONTRACTOR TO VERIFY EXISTING UTILITY LOCATIONS PRIOR TO START OF CONSTRUCTION. IMMEDIATELY NOTIFY CLIENT AND ENGINEER IF DISCREPANCIES OR CONFLICTS ARE FOUND. |
| CU02 | 8" X 2" SDR-9 POLYETHYLENE DOMESTIC WATER TAP. REFER TO DETAIL W-13. |
| CU03 | 2" SDR-9 POLYETHYLENE DOMESTIC WATER SERVICE; CONFIRM SIZE WITH MEP PLANS BY OTHERS. ESTIMATED 52 GPM. |
| CU04 | 2" X 1" TEE / IRRIGATION SPLIT |
| CU05 | 2" DOMESTIC WATER METER |
| CU06 | 2" GATE VALVE. REFER FOR DETAIL W-2 AND W-16. |
| CU07 | 1" SDR-9 POLYETHYLENE DOMESTIC WATER SERVICE |
| CU08 | 2" DOMESTIC RPZ BACKFLOW PREVENTER (PER LOCAL REQUIREMENTS) DOWNSTREAM OF THE WATER METER. PROVIDE POWER TO HOT BOX. REFER TO DETAIL CK-240. |
| CU09 | 8" X 6" DIP FIRE LINE TAP |
| CU10 | 2" SDR-9 POLYETHYLENE DOMESTIC WATER SERVICE; CONFIRM SIZE WITH MEP PLANS BY OTHERS. ESTIMATED 52 GPM. |
| CU11 | WATER LINE POINT OF ENTRY TO BUILDING; REFER TO MEP PLANS BY OTHERS. |
| CU12 | 1" IRRIGATION METER |
| CU13 | 1" RPZ IRRIGATION BACKFLOW PREVENTER (PER LOCAL REQUIREMENTS) DOWNSTREAM OF THE IRRIGATION METER. PROVIDE POWER TO HOT BOX. REFER TO DETAIL CK-240. |
| CU15 | 1" SDR-9 POLYETHYLENE IRRIGATION WATER LINE. REFER TO IRRIGATION PLANS BY OTHERS AND DETAILS CK-230 AND CK-235. INSTALL IRRIGATION SLEEVES UNDER PAVEMENT. LOCATION PER IRRIGATION PLAN. PROVIDE AS-BUILT TO CIRCLE K CONSTRUCTION MANAGER. |
| CU16 | 6" FIRE HYDRANT ASSEMBLY. REFER TO NCDOT DETAIL 1515.02. |
| CU18 | PRIVATE SANITARY SEWER LIFT STATION; REFER TO LIFT STATION PLANS AND MEP PLANS BY OTHERS |
| CU19 | SANITARY SEWER POINT OF CONNECTION. CONNECT TO EXISTING SEWER MAIN VIA 4" X 8" SADDLE. REFER TO DETAIL S-29. |
| CU20 | SANITARY SEWER SERVICE @ 1/8" PER LF MIN. SLOPE, 4' MIN. COVER (TYP.). |
| CU21 | SANITARY SEWER CLEANOUT. TRAFFIC RATED IF WITHIN PAVEMENT (TYP.). REFER TO DETAIL CK-205. |
| CU22 | 4" 1500 GAL. GREASE TRAP; REFER TO MEP PLANS BY OTHERS FOR SIZING, MATERIAL, VENTING, AND DETAILS. REFER TO DETAIL S-12. |
| CU23 | SANITARY SEWER POINT OF ENTRY TO BUILDING; REFER TO MEP PLANS BY OTHERS. |
| CU24 | GREASE SERVICE POINT OF ENTRY TO BUILDING; REFER TO MEP PLANS BY OTHERS. |
| CU25 | ELECTRIC TRANSFORMER PAD LOCATION. COORDINATE WITH LOCAL PROVIDER. LOCAL PROVIDER CAN SUPERSEDE THE PROPOSED TRANSFORMER PAD LOCATION. PROVIDE TWO (2) 6" CONDUITS BETWEEN POINT OF CONNECTION AND TRANSFORMER. 24" MINIMUM BURY DEPTH WITH 18" OF VERTICAL SEPARATION AT WATER AND SEWER CROSSINGS. |
| CU26 | EMERGENCY SHUT-OFF SWITCH, SEE ELECTRICAL AND FUEL PLAN. |
| CU27 | PROVIDE POWER TO EMERGENCY SHUT OFF SWITCH; REFER TO MEP AND FUELING PLANS. |
| CU28 | PROVIDE POWER TO AIR MACHINE. CIRCLE K VENDOR TO PROVIDE AIR MACHINE. |
| CU29 | PROVIDE POWER TO MID SIGN; WIRED BY BUILDING ELECTRICAL CONTRACTOR. VERIFY EXACT LOCATION AND DESIGN BEFORE ROUGH-IN. PERMITTED BY OTHERS. |
| CU30 | LIGHT POLE BASE. REFER TO LIGHTING, ELECTRICAL, AND STRUCTURAL PLANS BY OTHERS (TYP.) |
| CU31 | APPROXIMATE LOCATION OF RELOCATED POWER POLE. CONTRACTOR TO COORDINATE WITH DUKE ENERGY AND ANY OTHER UTILITY OR COMMUNICATION PROVIDER LOCATED ON THE UTILITY POLE. TO BE DETERMINED. |
| CU32 | EXISTING UTILITY POLE TO REMAIN |
| CU33 | 1" GATE VALVE. REFER FOR DETAIL W-2 AND W-16. |

ISSUED FOR CONSTRUCTION

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ERWIN, HARNETT COUNTY, NCDEQ, AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

SCALE 1"=30'

0 30' 60'

NAD 83


NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 048231 JACOB C. DOOLEY
06/09/2026

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| HRW SUBMITTAL #4 | 06/09/2026 |

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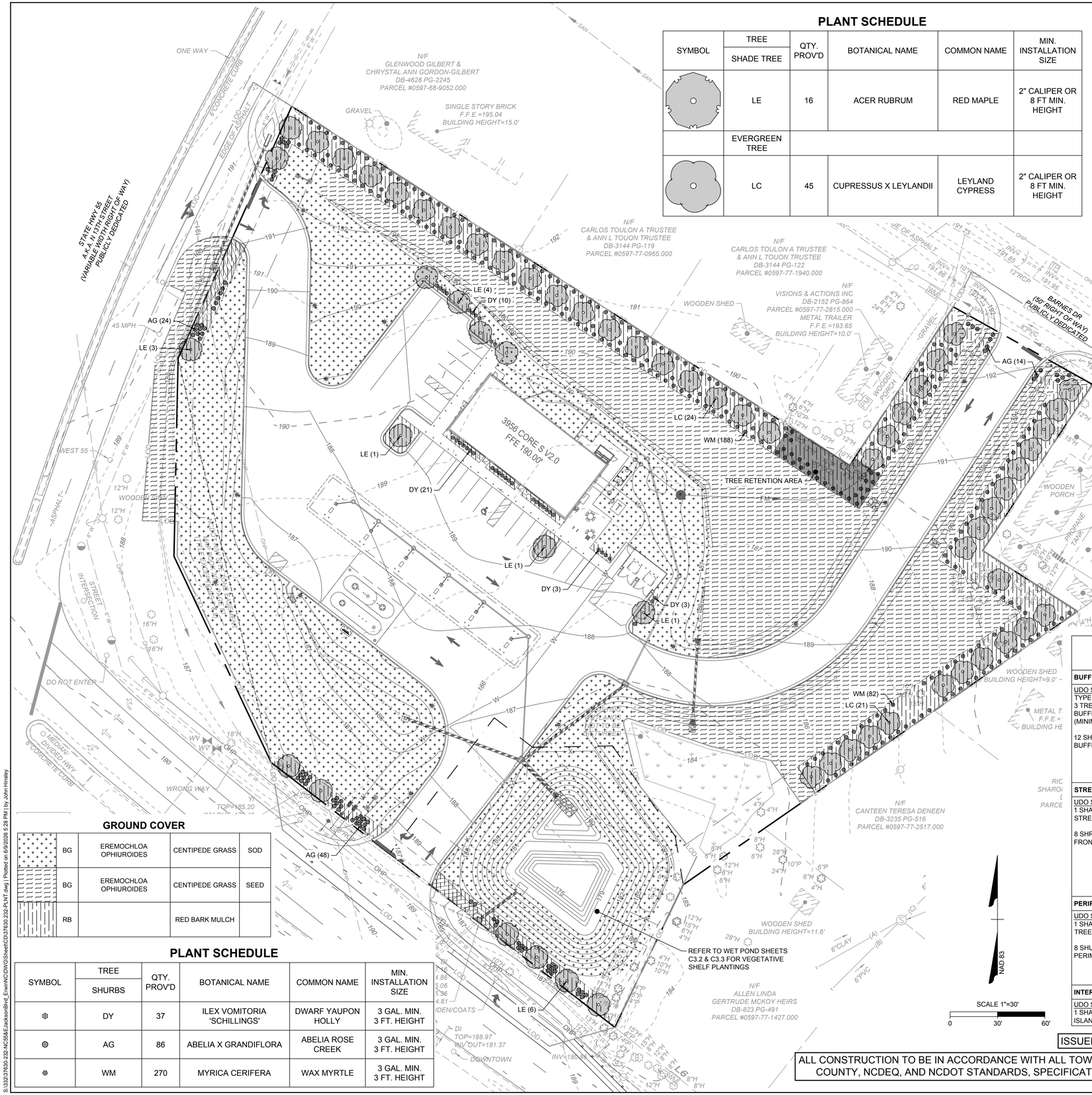
# TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC
TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA
UTILITY PLAN

JOB NO. 37630.232
SHEET NO. C5.0


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## PLANT SCHEDULE

| SYMBOL | TREE / SHADE TREE | QTY. PROV'D | BOTANICAL NAME | COMMON NAME | MIN. INSTALLATION SIZE |
|---|---|---|---|---|---|
| | LE | 16 | ACER RUBRUM | RED MAPLE | 2" CALIPER OR 8 FT MIN. HEIGHT |
| | EVERGREEN TREE | | | | |
| | LC | 45 | CUPRESSUS X LEYLANDII | LEYLAND CYPRESS | 2" CALIPER OR 8 FT MIN. HEIGHT |

## GROUND COVER

| | | | | |
|---|---|---|---|---|
| | BG | EREMOCHLOA OPHIUROIDES | CENTIPEDE GRASS | SOD |
| | BG | EREMOCHLOA OPHIUROIDES | CENTIPEDE GRASS | SEED |
| | RB | | RED BARK MULCH | |

## PLANT SCHEDULE

| SYMBOL | TREE / SHRUBS | QTY. PROV'D | BOTANICAL NAME | COMMON NAME | MIN. INSTALLATION SIZE |
|---|---|---|---|---|---|
| | DY | 37 | ILEX VOMITORIA 'SCHILLINGS' | DWARF YAUPON HOLLY | 3 GAL. MIN. 3 FT. HEIGHT |
| | AG | 86 | ABELIA X GRANDIFLORA | ABELIA ROSE CREEK | 3 GAL. MIN. 3 FT. HEIGHT |
| | WM | 270 | MYRICA CERIFERA | WAX MYRTLE | 3 GAL. MIN. 3 FT. HEIGHT |

### LANDSCAPE NOTES:

PRE-CONSTRUCTION

- PRIOR TO CONSTRUCTION LOCATE ALL UNDERGROUND UTILITIES WITHIN AND ADJACENT TO THE WORK AREA. LOCATIONS OF EXISTING BURIED UTILITY LINES SHOWN ON THE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AND ARE TO BE CONSIDERED APPROXIMATE. PROTECT ALL UTILITIES. REPAIR ALL DAMAGE TO UTILITIES, STRUCTURES, SITE APPURTENANCES, ETC. WHICH OCCURS AS A RESULT OF CONSTRUCTION.
- CONTRACTOR ENGAGED IN LANDSCAPE IMPLEMENTATION SHALL BE A LANDSCAPE CONTRACTOR REGISTERED IN THE STATE OF NORTH CAROLINA.
- VERIFY ALL PLANT MATERIAL QUANTITIES ON PLANS PRIOR TO BIDDING. PLANT LIST TOTALS ARE FOR CONVENIENCE ONLY AND MUST BE VERIFIED.
- PLANT MATERIAL SUBSTITUTIONS CAN ONLY OCCUR WITH PRIOR WRITTEN APPROVAL BY LANDSCAPE ARCHITECT.
- PRIOR TO THE COMMENCEMENT OF ANY ACTIVITIES REQUIRING A BUILDING OR ZONING PERMIT AN ON-SITE PRE-CONSTRUCTION CONFERENCE SHALL TAKE PLACE WITH THE DEVELOPER AND THE ADMINISTRATOR TO REVIEW PROCEDURES FOR THE PROTECTION AND MANAGEMENT OF ALL LANDSCAPE ELEMENTS TO REMAIN.
- ALL PLANT MATERIALS ARE SUBJECT TO LANDSCAPE ARCHITECT APPROVAL BEFORE, DURING, AND AFTER INSTALLATION.
  - ANY PLANT MATERIAL WHICH IS DISEASED, DISTRESSED, DEAD, OR REJECTED (PRIOR TO SUBSTANTIAL COMPLETION) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY, AND SIZE.
- ALL PLANT MATERIALS AND INSTALLATION SHALL COMPLY WITH RECOMMENDATIONS AND REQUIREMENTS OF ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK".
  - ALL PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, AND FREE OF PESTS AND DISEASE.
  - ALL PLANT MATERIAL SHALL BE CONTAINER GROWN OR BALLED AND BURLAPPED AS INDICATED IN THE PLANT LIST.
  - ALL TREES SHALL HAVE A STRAIGHT TRUNK AND FULL HEAD.

CONSTRUCTION/INSTALLATION

- CONTRACTOR IS ENCOURAGED TO COMPLETE TEMPORARY OR PERMANENT SEEDING IN STAGES FOR SOIL STABILIZATION AS AREAS ARE COMPLETED AFTER GRADING. THIS PLAN DOES NOT PRESENT ANY TEMPORARY STABILIZATION REQUIRED AS PART OF SWPPP PLAN.
- CONTRACTOR SHALL TAKE 3 REPRESENTATIVE SOIL SAMPLES OF EACH PROPOSED PLANT BED AND SUBMIT COPIES OF THE RESULTS TO THE LANDSCAPE ARCHITECT PRIOR TO BEGINNING WORK.
- STUMPS LABELED FOR REMOVAL SHALL BE EXCAVATED, NOT GROUND. REMOVE ALL DEBRIS FROM THE HOLE. FILL WITH TOP SOIL, COMPACT, AND RAKE SMOOTH PRIOR TO INSTALLING NEW PLANT MATERIAL.
- CONTRACTOR IS RESPONSIBLE FOR DELIVERY SCHEDULE AND PROTECTION BETWEEN DELIVERY AND PLANTING TO MAINTAIN HEALTHY PLANT CONDITIONS.
- ALL LANDSCAPED AND LAWN AREAS ARE TO RECEIVE A MINIMUM OF 4" OF TOPSOIL.
- ALL LANDSCAPE ISLANDS SHALL BE GRADED FOR POSITIVE DRAINAGE WITH NO LOW SPOTS ALLOWING WATER TO BE TRAPPED.
- INSTALL LANDSCAPE PLANTINGS AT ENTRANCES/EXITS AND PARKING AREAS ACCORDING TO PLANS SO MATERIAL WILL NOT INTERFERE WITH SIGHT DISTANCES.
- THE SIZE OF THE PLANTING AREA AND SIZE OF PLANT MATERIAL AT MATURITY SHALL ALLOW FOR A 2.5' BUMPER OVERHANG FROM THE BACK OF CURB.
- ALL TREES MUST BE GUYED OR STAKED AS DETAILED.
- AREAS DAMAGED FROM PLANT RELOCATION OR OTHER ACTIVITIES OF LANDSCAPE CONTRACTOR TO BE RESEEDED AND ESTABLISHED AT NO ADDITIONAL COST TO THE OWNER.
- CONTRACTOR IS RESPONSIBLE FOR WATERING ALL PLANT MATERIAL DURING INSTALLATION AND UNTIL FINAL INSPECTION AND ACCEPTANCE BY OWNER. CONTRACTOR SHALL NOTIFY OWNER OF CONDITIONS WHICH AFFECTS THE GUARANTEE. IT MAY BE NECESSARY TO TRUCK IN NON-CITY WATER TO MEET PLANT NEEDS.
- USE HERBICIDES, PESTICIDES, AND FERTILIZER IN A MANNER CONSISTENT WITH THE FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT AND IN ACCORDANCE WITH LABEL RESTRICTIONS.
- ALL LAWN AREAS TO BE SEEDED SHALL USE A LOCALLY GROWN COMMERCIAL MIX MEETING LATEST STATE OF NORTH CAROLINA AGRICULTURE STANDARDS FOR SEED AND PLANT CERTIFICATION.
- SEEDING AND STRAW NOTES FOR LAWN AREAS:
  - RIP THE ENTIRE AREA TO DEPTH OF NOT LESS THAN 6".
  - REMOVE ALL LOOSE ROCKS, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE SMOOTH AND UNIFORM. DISPOSE OF WASTE MATERIAL OFF-SITE.
  - CHISEL COMPACTED AREAS AND SPREAD TOPSOIL TO SPECIFIED DEPTH.
  - APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPER PHOSPHATE UNIFORMLY AND MIX WITH SOIL. APPLY SOIL AMENDMENTS PER REQUIRED SOIL ANALYSIS RECOMMENDATIONS.
  - CONTINUE TILAGE UNTIL A WELL PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED.
  - SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
  - MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
  - INSPECT ALL SEEDED AREAS AND IF POSSIBLE, MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON. IF GRANDSTAND SHOULD BE OVER 60% DAMAGED, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER, AND SEEDING RATES.
  - ANCHOR TACK WITH LIQUID ASPHALT AT 400 GAL/ACRE OR EMULSIFIED ASPHALT AT 300 GAL/ACRE.
- BIODEGRADABLE WEED MATTING (ALL-PRO WEED MAT OR APPROVED EQUAL) SHALL BE REQUIRED IN SHRUB BEDS ADJACENT TO BUILDING FACADE.
- PLANTING BEDS TO BE COMPLETELY COVERED WITH A MINIMUM 4" DEPTH OF MATERIAL FROM A LOCAL SOURCE HARVESTED IN A SUSTAINABLE MANNER. REFER TO LANDSCAPE SCHEME FOR MATERIAL SPECIFICATIONS.
- MULCH ALL PLANT BEDS AND TREE RINGS WITH FRESH, CLEAN MATERIAL PER SPECIFICATIONS. ALL MULCH EDGES SHALL BE NEATLY TUCKED. ALL STRING AND/OR BAILING WIRE SHALL BE REMOVED. DUST SHRUBS AND GROUND COVER AFTER MULCHING TO REMOVE LOOSE MATERIAL FROM PLANTS. DO NOT PLACE MULCH IN CONTACT WITH THE TREE TRUNK: KEEP A MINIMUM OF 4" AWAY FROM TREE TRUNK OR BASE OF PLANT.
- MULCH AND NO-MOW MIXES SHALL BE REPLENISHED AS NEEDED, ESPECIALLY AFTER HEAVY RAIN EVENTS. IF NO-MOW MIX GERMINATES AT A RATE OF LESS THAN 90%, THEN REMOVE OTHER SPECIES AND RESEED.

TEMPORARY IRRIGATION

- CONTRACTOR TO PROVIDE AND MAINTAIN TEMPORARY IRRIGATION FOR SOD WITHIN THE STORMWATER CONTROL MEASURE UNTIL SOD BECOMES ESTABLISHED.

INSPECTIONS/GUARANTEE

- LANDSCAPE CONTRACTOR SHALL NOTIFY GENERAL CONTRACTOR UPON COMPLETION OF LANDSCAPE INSTALLATION. CONTRACTOR WILL VERIFY COMPLETENESS INCLUDING THE REPLACEMENT OF ALL DEAD PLANT MATERIAL. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING A FINAL INSPECTION BY LANDSCAPE ARCHITECT.
- PLANT MATERIAL QUANTITIES AND SIZES WILL BE INSPECTED FOR COMPLIANCE WITH APPROVED PLANS BY A SITE PLAN REVIEW AGENT PRIOR TO THE RELEASE OF THE CERTIFICATE OF OCCUPANCY.
- CONTRACTOR TO GUARANTEE ALL PLANT MATERIALS FOR ONE FULL YEAR AGAINST DEFECTS INCLUDING DEATH AND UNSATISFACTORY GROWTH. WARRANTY PERIOD SHALL BEGIN UPON CERTIFICATE OF OCCUPANCY OR WHEN THE OWNER TAKES OVER MAINTENANCE, WHICHEVER COMES FIRST.

## TOWN OF ERWIN LANDSCAPE REQUIREMENTS

| REQUIREMENT | CALCULATION | REQUIRED | SIZE (AT TIME OF PLANTING) |
|---|---|---|---|
| **BUFFER YARDS:** | | | |
| UDO SEC. 36-436.8:<br>TYPE A BUFFER YARD<br>3 TREES PER 1,000 S.F. OF BUFFER YARD<br>(MINIMUM 75% EVERGREEN)<br><br>12 SHRUBS PER 1,000 S.F. OF BUFFER YARD | TOTAL B.Y.A. = 22,451 S.F.<br>(22,451 / 1,000) X 3 = 68 TREES<br>68 X 75% = 51 EVERGREEN TREES<br>(22,451 / 1,000) X 12 = 270 SHRUBS | EXISTING TREES<br>37 MISC. HARDWOOD TREES<br>6 PINE TREES (EVERGREEN)<br><br>51 - 6 = 45 EVERGREEN TREES<br>17 - 37 = 0 OTHER TREES<br><br>270 SHRUBS | EVERGREEN TREES:<br>1.5" CALIPER OR 6 FT. MIN. HEIGHT<br>SHADE TREES:<br>2" CALIPER OR 8 FT MIN. HEIGHT<br><br>3 GAL. MIN. AND 3 FT MIN. HEIGHT |
| **STREET FRONTAGE:** | | | |
| UDO SEC. 36-436.13:<br>1 SHADE TREE PER 40 LF OF STREET FRONTAGE<br><br>8 SHRUBS PER 40 LF OF STREET FRONTAGE | NC 55 & E JACKSON BLVD<br>359 LF OF FRONTAGE (EXCLUDING 270 LF OF FRONTAGE IN NCDOT SIGHT DISTANCE EASEMENT)<br>(359 / 40) X 1 = 9 TREES<br>(359 / 40) X 8 = 72 SHRUBS<br><br>BARNES DR<br>101 LF OF FRONTAGE<br>(67 / 40) X 1 = 2 TREES<br>(67 / 40) X 8 = 14 SHRUBS | NC 55 & E JACKSON BLVD<br>9 SHADE TREES<br>72 SHRUBS<br><br>BARNES DR<br>2 EXISTING TREES<br>2 - 2 = 0 TREES<br>14 SHRUBS | 2" CALIPER OR 8 FT. MIN HEIGHT TREES<br><br>3 GAL. MIN. AND 3 FT MIN. HEIGHT |
| **PERIPHERAL PARKING AREAS:** | | | |
| UDO SEC. 36-436.14:<br>1 SHADE TREE OR 1 ORNAMENTAL TREE PER 40 LF OF PERIMETER<br><br>8 SHURBS PER 40 LF OF PERIMETER | 182 LF OF PARKING PERIMETER<br>(182 / 40) X 1 = 5 TREES<br>(182 / 40) X 8 = 37 SHRUBS | 5 TREES<br><br>37 SHRUBS | SHADE TEES:<br>2" CALIPER OR 8 FT. MIN HEIGHT TREES<br>ORNAMENTAL TREES:<br>1.5" CALIPER OR 6 FT. MIN. HEIGHT<br><br>3 GAL. MIN. AND 3 FT. MIN. HEIGHT |
| **INTERIOR PARKING AREAS:** | | | |
| UDO SEC. 36-436.15:<br>1 SHADE TREE PER LANDSCAPE ISLAND | 2 LANDSCAPE ISLANDS | 2 SHADE TREES | 2" CALIPER OR 8 FT. MIN HEIGHT TREES |

ISSUED FOR CONSTRUCTION

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ERWIN, HARNETT COUNTY, NCDEQ, AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 048231 ENGINEER JACOB C. DOOLEY
06/09/2026

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| DATE | REVISION DESCRIPTION |
|---|---|
| 03/02/2026 | NCDOT ROADWAY EXHIBIT SUBMITTAL #1 |
| 03/20/2026 | NCDEQ, NCDOT, TOWN OF ERWIN, HRVI RESUBMITTALS |
| 04/29/2026 | HRVI RESUBMITTAL |
| 05/20/2026 | HRVI SUBMITTAL |
| 06/09/2026 | HRVI SUBMITTAL #4 |

DATE 12/17/2025
DRAWN BY 332
DESIGNED BY J. DOOLEY
CHECKED BY J. DOOLEY
SCALE AS SHOWN

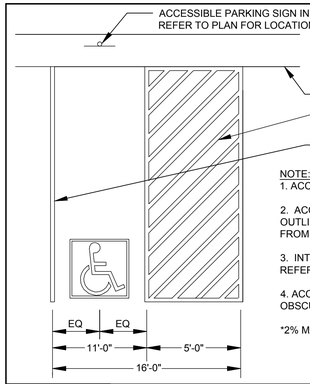
**TIMMONS GROUP**
NORTH CAROLINA LICENSE NO. C-1652

CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC
TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA
LANDSCAPE PLAN

JOB NO. 37630.232
SHEET NO. C6.0

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NOTE:
1. ACCESS AISLE REQUIRED.

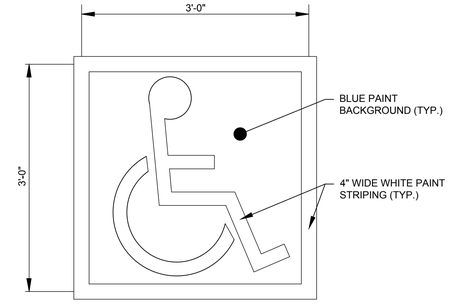
2. ACCESSIBLE SPACES MUST BE PROMINENTLY OUTLINED IN COLORS OR LATERALS CONTRASTING FROM REGULAR PARKING SPACES.

3. INTERNATIONAL ACCESSIBLE SYMBOL REQUIRED REFER TO DETAIL CK-110 AND CODE REQUIREMENTS.

4. ACCESSIBLE SIGN REQUIRED - MUST NEVER BE OBSCURED.

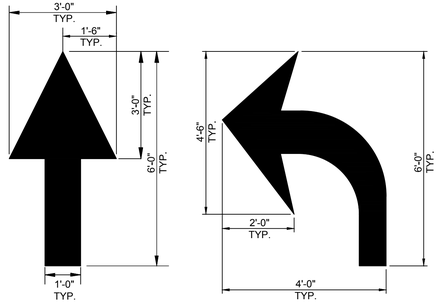
*2% MAXIMUM SLOPE EACH WAY

**# CK-105** REVISED: 2022-09-16 — ACCESSIBLE PARKING STALL — NOT TO SCALE



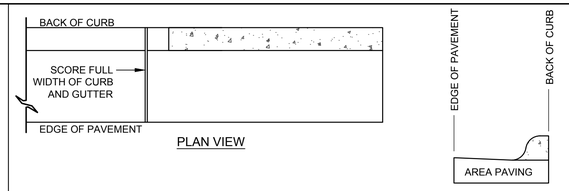

NOTE:
1. TO BE PAINTED PER AHJ REQUIREMENTS.

**# CK-110** REVISED: 2022-09-16 — ADA PARKING STRIPING DETAIL — NOT TO SCALE




NOTE:
1. ALL TRAFFIC FLOW ARROWS TO BE SOLID WHITE REFLECTIVE TRAFFIC PAINT PER DIMENSIONS ABOVE.
2. THIS DETAIL ONLY APPLIES TO PRIVATE PROPERTY.

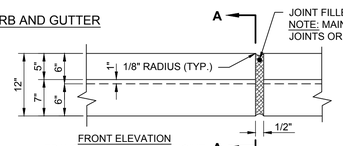
**# CK-115** REVISED: 2022-09-16 — TRAFFIC FLOW ARROW DETAIL — NOT TO SCALE



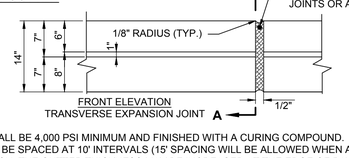

NOTES:
1. TRANSITION FROM FLUSH CURB TO STANDARD 6" CURB HEIGHT OVER WIDTH OF THE PARKING STALL OR 10'.
2. REFER TO CURB AND GUTTER DETAIL(S) FOR DIMENSIONS AND CONCRETE SPECIFICATIONS.

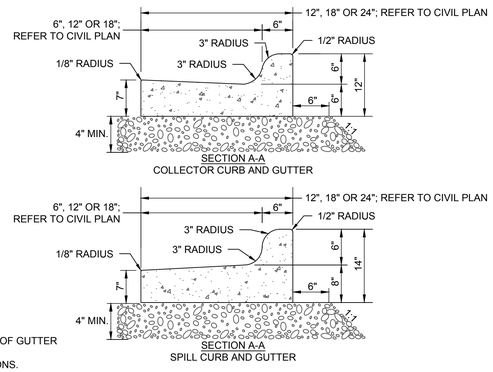
**# CK-135** REVISED: 2022-09-16 — CURB TAPER DETAIL — NOT TO SCALE

COLLECTOR CURB AND GUTTER



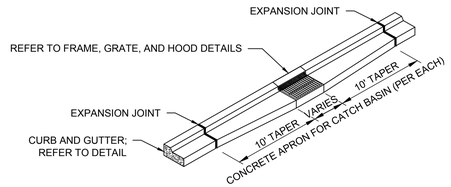

SPILL CURB AND GUTTER

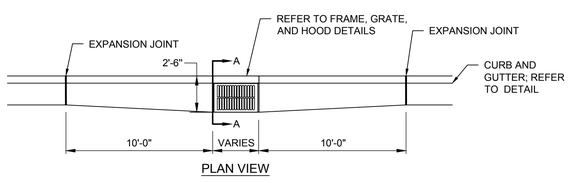


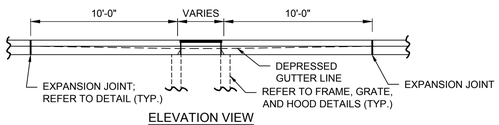



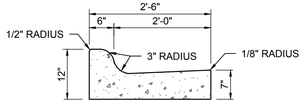

NOTES:
1. CONCRETE CURBING SHALL BE 4,000 PSI MINIMUM AND FINISHED WITH A CURING COMPOUND.
2. CONTROL JOINTS SHALL BE SPACED AT 10' INTERVALS (15' SPACING WILL BE ALLOWED WHEN A MACHINE IS USED).
3. AT CONTRACTOR'S OPTION, THE GUTTER THICKNESS MAY BE INCREASED AT THE EDGE OF PAVEMENT TO MAKE BOTTOM OF GUTTER CONTIGUOUS WITH BOTTOM OF ASPHALT PAVEMENT.
4. GUTTER PAN SLOPE TO BE ADJUSTED WITHIN ACCESSIBLE PARKING SPACES TO MATCH SLOPE BETWEEN SPOT ELEVATIONS.

**# CK-120** REVISED: 2022-09-16 — STANDARD 12", 18" AND 24" CONCRETE CURB AND GUTTER DETAIL — NOT TO SCALE



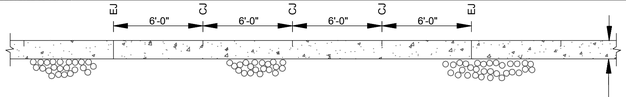



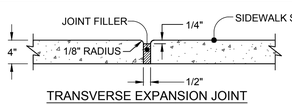



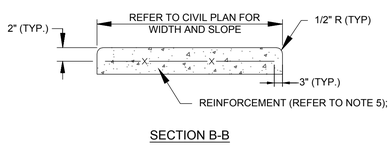



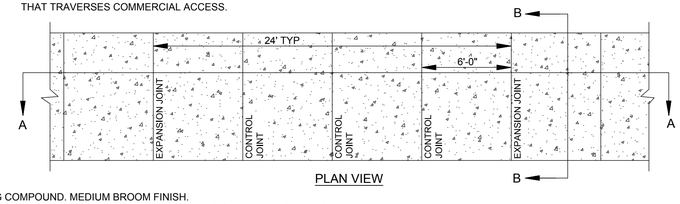

NOTES:
1. THIS DETAIL ONLY APPLIES TO PRIVATE PROPERTY.

**# CK-125** REVISED: 2022-09-16 — STANDARD CATCH BASIN CURBING TRANSITION (FOR USE WITH 24" CURB & GUTTER) — NOT TO SCALE



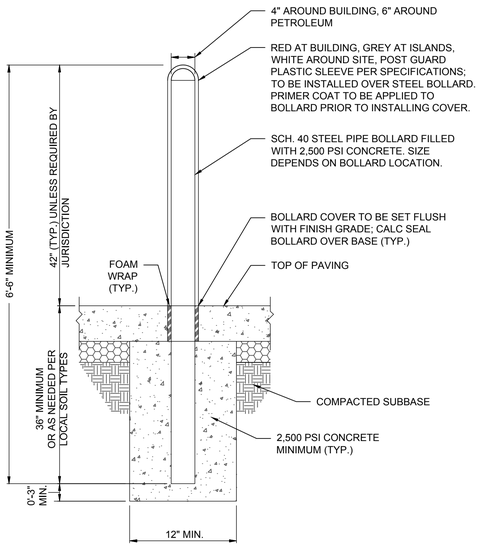



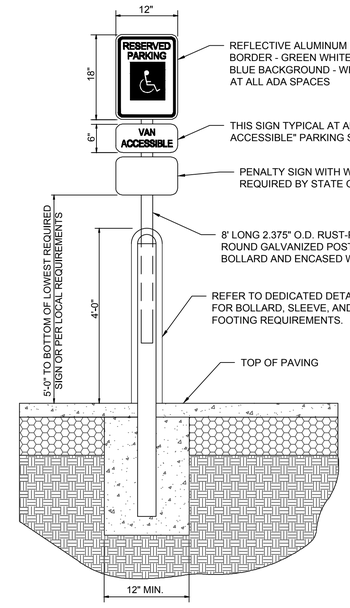

NOTE:
1. CONCRETE SIDEWALK SHALL BE XXXX PSI MINIMUM AND FINISHED WITH CURING COMPOUND. MEDIUM BROOM FINISH.
2. SIDEWALK TO HAVE A CONTROL JOINT EVERY 6' AND A 1/2" TRAVERSE EXPANSION EVERY 24', CONNECTION TO ADJACENT SIDEWALK, AND OTHER SURFACES.
3. A 6" DEPTH IS REQUIRED AT LOCATION OF DRIVEWAY CROSSINGS, AT STREET INTERSECTIONS (ALONG THE LENGTH OF RADIUS CURB RETURNS), AND IN HANDICAP RAMPS.
4. SIDEWALK REINFORCEMENT TO BE USED IN SIDEWALK ADJACENT TO BUILDING. ALL OTHER SIDEWALK TO BE NON REINFORCED SIDEWALK.

**# CK-130** REVISED: 2022-09-16 — CONCRETE SIDEWALK DETAIL — NOT TO SCALE




NOTES:
1. 4" STEEL BOLLARDS TO BE INSTALLED IN FRONT OF THE STORE WHERE SPECIFIED.
2. 6" STEEL BOLLARDS TO BE INSTALLED UNDER GAS CANOPY WHERE SPECIFIED ON THE PETROLEUM PLANS.
3. 4" & 6" STEEL BOLLARDS WILL BE DELIVERED WITH PLASTIC COVER BASED ON NATIONAL ACCOUNT AGREEMENT, INSTALLED BY GENERAL CONTRACTOR. REFER TO RESPONSIBILITY MATRIX.
4. REFER TO ARCHITECTURAL PLANS FOR BOLLARDS AT DUMPSTER ENCLOSURE.

**# CK-180** REVISED: 2022-09-16 — 4" & 6" BOLLARD WITH COVER DETAIL — NOT TO SCALE




NOTES:
1. ONE REQUIRED AT EACH ACCESSIBLE PARKING SPACE.
2. WHERE ACCESSIBLE SPACES FACE EACH OTHER WITHOUT WALKWAY, THERE SHALL BE ONE POST WITH SIGNS MOUNTED ON BOTH SIDES.
3. MOUNT SIGNS TO POST WITH GALVANIZED OR CADMIUM PLATED 5/16" DIAMETER STEEL BOLTS, NUTS, AND WASHERS. CONTRACTOR SHALL SUPPLY AND INSTALL 5/16" NYLON WASHERS BETWEEN BOLT HEADS AND SIGN FACE TO PROTECT FINISH.
4. SIGNS SHALL CONFORM TO THE CURRENT "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)" PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION (FHWA) FOR SIZE, COLOR, AND DIMENSIONS.
5. SIGN SHALL CONFORM TO NATIONAL ADA REQUIREMENTS (CONFIRM FOR EACH STATE).

**# CK-185** REVISED: 2022-09-16 — BOLLARD MOUNTED ADA SIGN DETAIL — NOT TO SCALE

ISSUED FOR CONSTRUCTION

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ERWIN, HARNETT COUNTY, NCDEQ, AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS


NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 048231 JACOB C. DOOLEY
06/09/2026

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| REVISION DESCRIPTION | DATE |
|---|---|
| NCDOT ROADWAY EXHIBIT SUBMITTAL #1 | 03/02/2026 |
| NCDEQ, NCDOT, TOWN OF ERWIN, HRVI RESUBMITTALS | 03/20/2026 |
| HRVI RESUBMITTAL | 04/29/2026 |
| HRVI SUBMITTAL | 05/20/2026 |
| HRVI SUBMITTAL #4 | 06/09/2026 |

DATE: 12/17/2025
DRAWN BY: 332
DESIGNED BY: J. DOOLEY
CHECKED BY: J. DOOLEY
SCALE: AS SHOWN

**TIMMONS GROUP**
NORTH CAROLINA LICENSE NO. C-1652

CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC
TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA

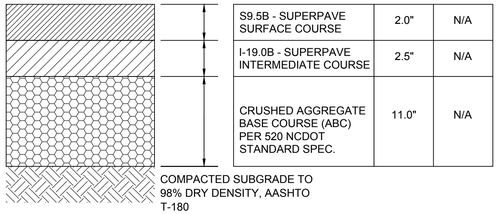
NOTES AND DETAILS

JOB NO. 37630.232
SHEET NO. C7.0


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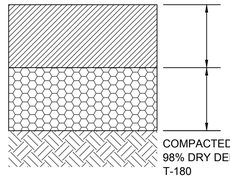
S:\332\37630-232-NCS&E-JacksonBlvd_Erwin\CIVIL\DWG\Sheet\CD\37630-232-NTDT1.dwg | Plotted on 6/9/2026 5:29 PM | by John Hinsley



| | HEAVY DUTY | LIGHT DUTY |
|---|---|---|
| S9.5B - SUPERPAVE SURFACE COURSE | 2.0" | N/A |
| I-19.0B - SUPERPAVE INTERMEDIATE COURSE | 2.5" | N/A |
| CRUSHED AGGREGATE BASE COURSE (ABC) PER 520 NCDOT STANDARD SPEC. | 11.0" | N/A |

COMPACTED SUBGRADE TO 98% DRY DENSITY, AASHTO T-180

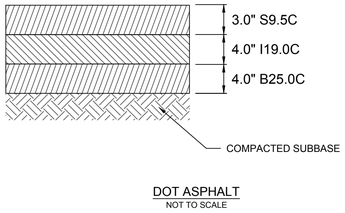
ASPHALT PAVEMENT MINIMUM SECTIONS
NOT TO SCALE



| | HEAVY DUTY | STANDARD DUTY |
|---|---|---|
| CONCRETE (4,000 PSI W/ MEDIUM BROOM FINISH; 4,500 PSI FOR NORTHERN CLIMATES) | 8.0" W/ FIBER MESH | 5.0" W/ FIBER MESH |
| CRUSHED AGGREGATE BASE COURSE (ABC) PER 520 NCDOT STANDARD SPEC. | 6.0" | 4.0" |

COMPACTED SUBGRADE TO 98% DRY DENSITY, AASHTO T-180

CONCRETE PAVEMENT MINIMUM SECTIONS
NOT TO SCALE

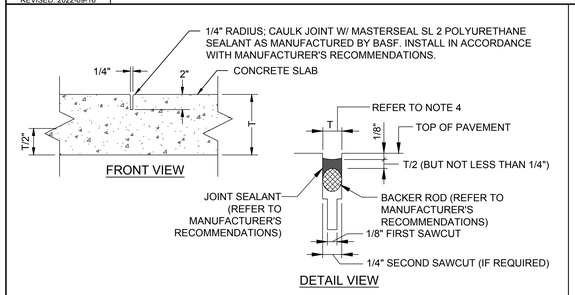



DOT ASPHALT
NOT TO SCALE

NOTES:
1. PREPARING, GRADING, SHAPING, AND COMPACTION OF SUBGRADE SOILS SHOULD BE PERFORMED IN ACCORDANCE WITH DIVISION 5, SECTION 501 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (2006). PREPARING, GRADING, SHAPING, AND COMPACTION OF AGGREGATE BASE COURSE (CABC) STONE SHOULD BE PERFORMED IN ACCORDANCE WITH DIVISION 5, SECTION 520 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (2006). PLACEMENT AND COMPACTION OF THE BITUMINOUS CONCRETE SHOULD BE PERFORMED IN ACCORDANCE WITH DIVISION 6, SECTION 600 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (2006). PROPER SUBGRADE COMPACTION, ADHERENCE TO THE NCDOT SPECIFICATIONS, AND COMPLIANCE WITH PROJECT PLANS AND SPECIFICATIONS ARE CRITICAL TO THE PERFORMANCE OF THE CONSTRUCTED PAVEMENT.
2. CONTRACTOR MAY CHOOSE TO INSTALL INTERMEDIATE COURSES OF PAVEMENT TO STABILIZE THE SITE DURING CONSTRUCTION AT NO ADDITIONAL COST. CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE ADEQUATE THICKNESS REQUIRED FOR INTERMEDIATE PAVING. INCREASES IN THE DESIGN PAVEMENT SECTION TO FACILITATE INTERMEDIATE PAVING SHALL BE PROVIDED AT NO ADDITIONAL COST.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGES TO SUBGRADE, INSTALLED BASE COURSE AND/OR INTERMEDIATE PAVING PRIOR TO PLACING SUBSEQUENT PAVEMENT LIFTS AT NO ADDITIONAL COST.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING PAVEMENT DURING ALL PHASES OF WORK. THE FINAL SURFACE OF PAVEMENT SHALL BE FREE OF ALL DEFECTS OR DAMAGE.
5. PER GEOTECH REPORT (UES PROJECT NUMBER A25117.01244.000) BY UNIVERSAL ENGINEERING SCIENCES DATED JULY 30, 2025 AND CLIENT PREFERENCES.

# CK-170
REVISED: 2022-09-16

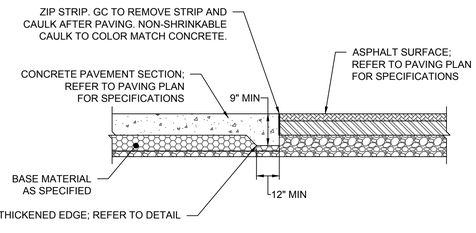
## PAVEMENT SECTIONS DETAIL
NOT TO SCALE




NOTES:
1. REFER TO APPLICABLE DETAIL FOR CONCRETE DESIGN.
2. REFER TO "CONCRETE PAVEMENT JOINT DETAIL" AND PAVING PLAN FOR SPACING.
3. SAWCUT JOINTS THE SAME DAY AS THE POUR.
4. WAIT AS LONG AS FEASIBLE TO SEAL JOINTS TO ALLOW CONCRETE SHRINKAGE TO OCCUR. IF REQUIRED, RE-SAW JOINT IMMEDIATELY PRIOR TO INSTALLING SEALANT TO ACHIEVE NECESSARY JOINT WIDTH. ENSURE JOINT IS CLEAN, DRY, AND SIDES ARE PREPARED PER MANUFACTURER'S RECOMMENDATIONS.

# CK-140
REVISED: 2022-09-16

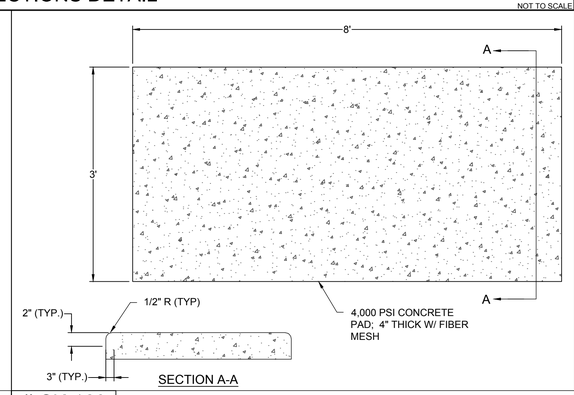
## CONTROL JOINT DETAIL
NOT TO SCALE




NOTES:
1. REFER TO APPLICABLE DETAIL FOR PAVEMENT, ABC, AND SUBGRADE DESIGNS.

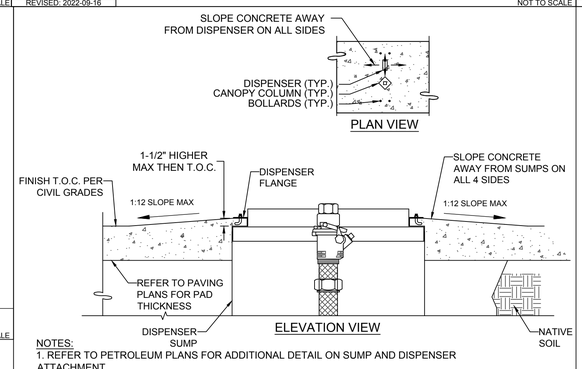
# CK-150
REVISED: 2022-09-16

## CONCRETE-TO-ASPHALT DETAIL
NOT TO SCALE




# CK-160
REVISED: 2022-09-16

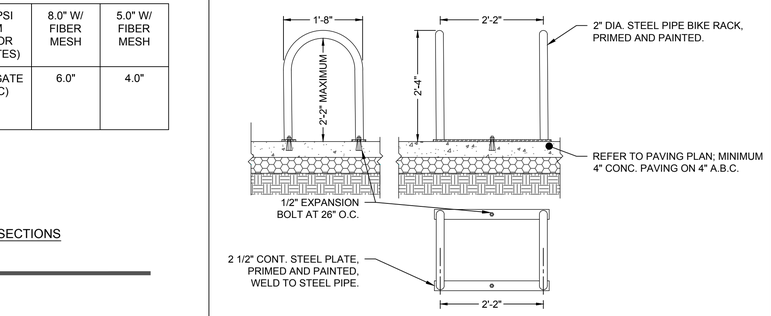
## AIR/VAC/WATER EQUIPMENT PAD DETAIL
NOT TO SCALE




NOTES:
1. REFER TO PETROLEUM PLANS FOR ADDITIONAL DETAIL ON SUMP AND DISPENSER ATTACHMENT.
2. REFER TO CONCRETE PAVEMENT JOINT DETAIL.

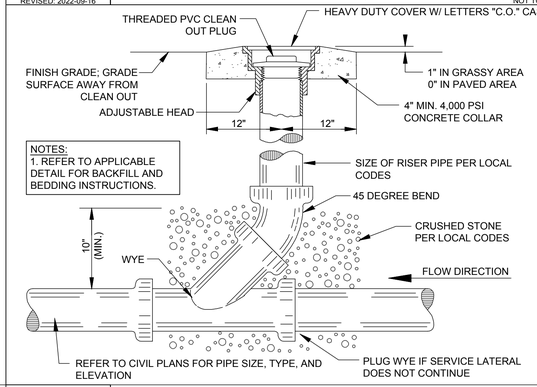
# CK-200
REVISED: 2022-09-16

## DISPENSER SUMP DETAIL
NOT TO SCALE



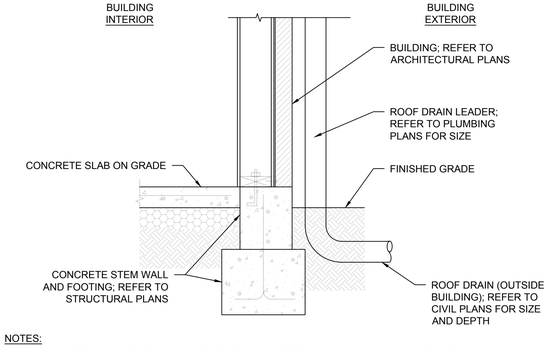

# CK-198
REVISED: 2022-09-16

## BIKE RACK DETAIL (TYPICAL OF 2)
NOT TO SCALE




# CK-205
REVISED: 2022-09-16

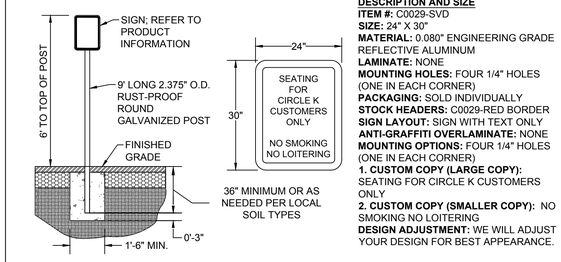
## SANITARY SEWER CLEANOUT DETAIL
NOT TO SCALE




NOTES:
1. FOR ADDITIONAL INFORMATION, REFER TO ARCHITECTURAL, PLUMBING, AND STRUCTURAL PLANS

# CK-212
REVISED: 2022-09-16

## BUILDING ROOF DRAIN CONNECTION
NOT TO SCALE

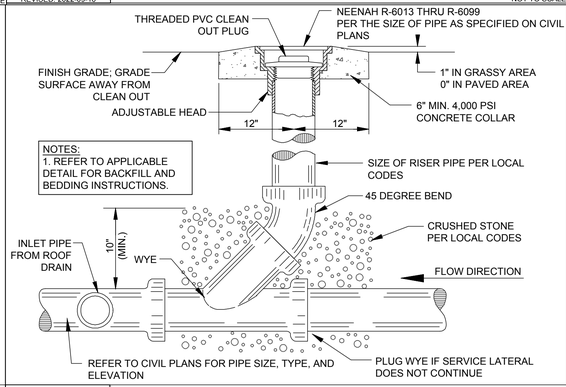



**DESCRIPTION AND SIZE**
**ITEM #:** C0029-SVD
**SIZE:** 24" X 30"
**MATERIAL:** 0.080" ENGINEERING GRADE REFLECTIVE ALUMINUM
**LAMINATE:** NONE
**MOUNTING HOLES:** FOUR 1/4" HOLES (ONE IN EACH CORNER)
**PACKAGING:** SOLD INDIVIDUALLY
**STOCK HEADERS:** C0029-RED BORDER
**SIGN LAYOUT:** SIGN WITH TEXT ONLY
**ANTI-GRAFFITI OVERLAMINATE:** NONE
**MOUNTING OPTIONS:** FOUR 1/4" HOLES (ONE IN EACH CORNER)
**1. CUSTOM COPY (LARGE COPY):** SEATING FOR CIRCLE K CUSTOMERS ONLY
**2. CUSTOM COPY (SMALLER COPY):** NO SMOKING NO LOITERING
**DESIGN ADJUSTMENT:** WE WILL ADJUST YOUR DESIGN FOR BEST APPEARANCE.

NOTES:
1. MOUNT SIGNS TO POST WITH GALVANIZED OR CADMIUM PLATED 5/16" DIAMETER STEEL BOLTS, NUTS, AND WASHERS. PROVIDE AND INSTALL POST, SIGN, AND 5/16" NYLON WASHERS BETWEEN BOLT HEADS AND SIGN FACE TO PROTECT FINISH.

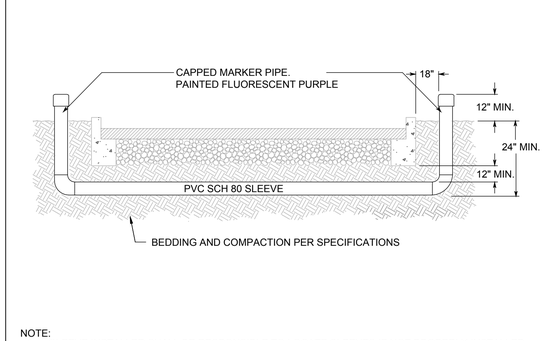
# CK-199
REVISED: 2022-09-16

## CUSTOMER ONLY SEATING SIGN DETAIL
NOT TO SCALE




# CK-210
REVISED: 2022-09-16

## STORM DRAIN CLEANOUT DETAIL
NOT TO SCALE




NOTE:
1. SLEEVE INSTALLER SHALL BE RESPONSIBLE TO LOCATE SLEEVES IF NOT PROPERLY INSTALLED.
2. SIZE PIPE TO ACCOMODATE IRRIGATION PIPING. 2" MIMIMUM DIAMETER.
3. ALL JOINTS TO BE SOLVENT WELDED AND WATERTIGHT.

# CK-230
REVISED: 2022-09-16

## IRRIGATION SLEEVING DETAIL
NOT TO SCALE

ISSUED FOR CONSTRUCTION

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ERWIN, HARNETT COUNTY, NCDEQ, AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS


NORTH CAROLINA PROFESSIONAL SEAL 048231 ENGINEER JACOB C. DOOLEY
06/09/2026

THIS DRAWING PREPARED AT THE
**RALEIGH OFFICE**
5410 Trinity Road, Suite 102 | Raleigh, NC 27607
TEL 919.866.4951 FAX 919.833.8124 www.timmons.com

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| REVISION DESCRIPTION | DATE |
|---|---|
| NCDOT ROADWAY EXHIBIT SUBMITTAL #1 | 03/02/2026 |
| NCDEQ, NCDOT, TOWN OF ERWIN, HRW RESUBMITTALS | 03/20/2026 |
| HRW RESUBMITTAL | 04/29/2026 |
| NCDOT SUBMITTAL | 05/20/2026 |
| HRW SUBMITTAL #4 | 06/09/2026 |

DATE
12/17/2025
DRAWN BY
332
DESIGNED BY
J. DOOLEY
CHECKED BY
J. DOOLEY
SCALE
AS SHOWN

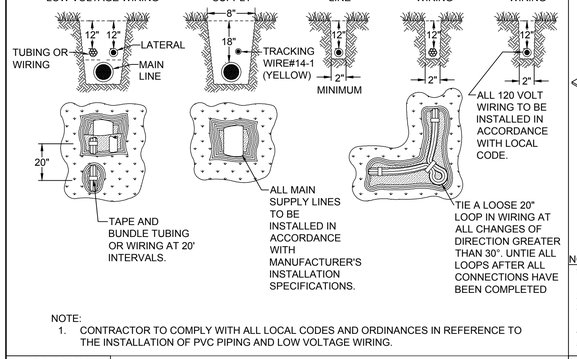
TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC
TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA
NOTES AND DETAILS

JOB NO.
37630.232
SHEET NO.
C7.1


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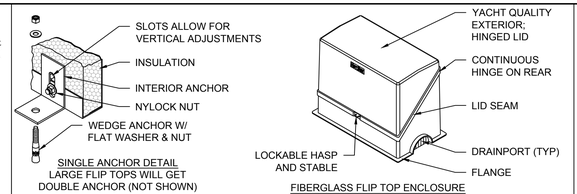



NOTE:
1. CONTRACTOR TO COMPLY WITH ALL LOCAL CODES AND ORDINANCES IN REFERENCE TO THE INSTALLATION OF PVC PIPING AND LOW VOLTAGE WIRING.

# CK-235
REVISED: 2022-09-16

## IRRIGATION TRENCHING DETAIL

NOT TO SCALE




SINGLE ANCHOR DETAIL
LARGE FLIP TOPS WILL GET DOUBLE ANCHOR (NOT SHOWN)




FIBERGLASS FLIP TOP ENCLOSURE

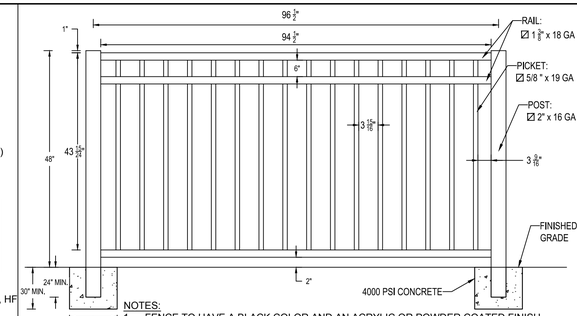
| HOT BOX CATALOG NUMBER | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| TYPE | STYLE | WIDTH | LENGTH | HEIGHT | COLOR OPTIONS | LIGHTS | FANS | ALARMS |
| H-HEATED | F-FLIP TOP FIBERGLASS | * | * | * | W-WHITE (SAIL) | N/A | N/A | N/A |
| * GC TO SIZE; REFER TO NOTE 2 | | | | | | | | |

NOTES:
1. PROVIDE AN ABOVE GROUND HEATED HUBBELL FLIP-TOP FIBERGLASS HOT BOX ENCLOSURE, HB MODEL, HF PART NUMBER, COLOR = WHITE (SAIL).
2. SIZE EACH ENCLOSURE TO ACCOMODATE INDIVIDUAL APPLICATION.
3. USE AN ALTERNATE ENCLOSURE ONLY IF REQUIRED BY JURISDICTION AND APPROVED BY CONSTRUCTION MANAGER.
4. SLAB SIZE SHALL BE 9" LARGER THAN ENCLOSURE EXTERIOR DIMENSIONS AND 4" THICK MINIMUM.
5. ENCLOSURE SHALL BE ASSEMBLED PER THE MANUFACTURERS INSTRUCTIONS.

# CK-240
REVISED: 2022-09-16

## HOT BOX DETAIL

NOT TO SCALE




NOTES:
1. FENCE TO HAVE A BLACK COLOR AND AN ACRYLIC OR POWDER COATED FINISH.
2. REFER TO FENCE MANUFACTURER FOR SPECIFIC FENCING DETAILS.
3. LOCATION: TOP OF RETAINING WALLS AS REQUIRED BY STATE AND LOCAL CODES.
4. NO MANUFACTURER OR INSTALLER SIGNS ARE PERMITTED ON THE FENCE.
5. WING WALLS REQUIRED WHEN FENCING RUNS ATOP RETAINING WALLS AND WALL HEIGHT EXCEEDS 30".

# CK-325
REVISED: 2022-09-16

## METAL FENCE DETAIL

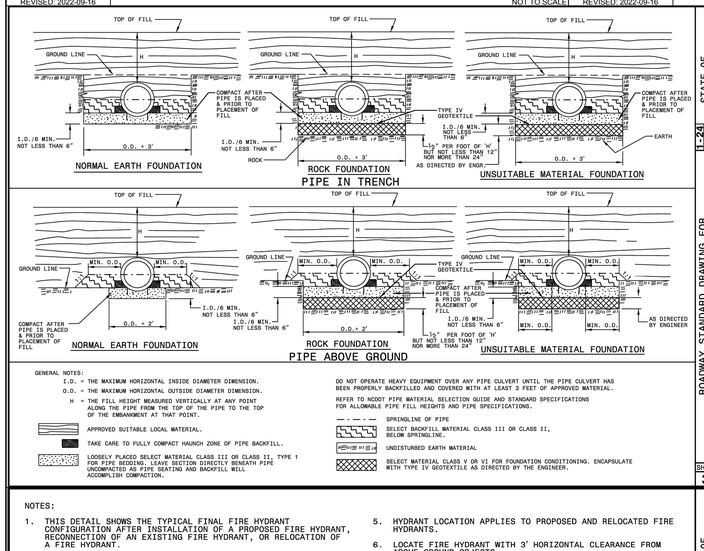
NOT TO SCALE

1. SAWCUT AND REMOVE EXISTING SIDEWALK AND/OR PAVEMENT AS REQUIRED TO CONSTRUCT CURB RAMP.
2. THE CURB RAMP SHALL HAVE A MINIMUM CONCRETE THICKNESS OF FOUR (4) INCHES.
3. ELEVATION DIFFERENCE BETWEEN TOP AND BOTTOM OF CURB RAMP SHALL NOT EXCEED 6 INCHES.
4. THE CURB RAMP SLOPES SHALL NOT EXCEED A MAXIMUM CROSS SLOPE OF 2.0% AND THE MAXIMUM LONGITUDINAL SLOPES AS INDICATED ON THE DETAILS.
5. TRANSITION FROM RAMP AND LANDING TO WALK, GUTTER, OR STREET SHALL BE FLUSH.
6. CONTRACTOR IS STRONGLY ENCOURAGED TO CONSTRUCT PROPOSED REMEDIATION MEASURES BELOW THE STATED MAXIMUMS IN ORDER TO ALLOW FOR CONSTRUCTION TOLERANCES. ANY REQUIRED RECONSTRUCTION EXCEEDING THE ADA MAXIMUMS WILL BE THE CONTRACTOR'S SOLE RESPONSIBILITY.
7. MECHANICALLY REMOVE ALL EXISTING PAINT STRIPING, APPLY SEAL COAT AND RE-STRIPE ACCESSIBLE SPACES AND AISLES IN ACCORDANCE WITH PARKING LOT STRIPING DETAIL(S) AND SPECIFICATIONS PROVIDED. SEAL COAT SHALL ENCOMPASS THE ENTIRE LIMITS OF THE RE-STRIPED SPACES.
8. DIMENSIONS ARE TO THE CENTERLINE OF MARKINGS.
9. PAVEMENT MARKINGS SHALL BE A HIGH QUALITY PAINT RECOMMENDED BY THE PAINT MANUFACTURER. PAINT COLORS SHALL CLOSELY MATCH THE FEDERAL STANDARD 595C COLOR NUMBER AS FOLLOWS: BLUE-COLOR 15180, WHITE-COLOR 37925, AND YELLOW-COLOR 33538.
10. PROVIDE ACCESSIBLE PARKING SIGNS AS REQUIRED.
11. REMOVE ALL EXISTING SIGNS AND REPLACE WITH NEW COMPLIANT SIGNS.
12. EXTEND EXISTING SIGN POSTS USING THE SIGN POST COUPLER DETAIL WHEN NECESSARY IN ORDER TO CONFORM WITH THE ACCESSIBLE PARKING SIGN DETAIL.
13. PATCH AND/OR REPAIR EXISTING PAVEMENT AT SIGN POST REMOVAL LOCATIONS AS REQUIRED. PROVIDE A SMOOTH SURFACE. REPLACE WITH MATERIAL IN KIND.
14. PROVIDE WHEEL STOP AS SHOWN IN PARKING LOT STRIPING DETAIL(S) AND IN ACCORDANCE WITH THE WHEEL STOP DETAIL. UTILIZE EXISTING WHEEL STOPS IF AVAILABLE.
15. THE AREA OF PAVEMENT SLOPE REPAIR SHALL BE GRADED BETWEEN 1.0% MINIMUM TO 2.0% MAXIMUM SLOPE IN ANY DIRECTION UPON THE COMPLETION OF THE REPAIR.
16. VERIFY LIMITS OF SLOPE REPAIR. LIMITS MAY BE BEYOND WHAT IS GRAPHICALLY SHOWN FOR PROPER 2.0% SLOPE TRANSITION.
17. ALL STANDARD SPACES AFFECTED BY PAVEMENT SLOPE REPAIR SHALL BE RE-STRIPED (MATCH EXISTING COLOR AND DIMENSIONS) IN ACCORDANCE WITH PROVIDED PARKING LOT STRIPING DETAIL(S) AND PAVEMENT MARKINGS SPECIFICATION.

# CK-435
REVISED: 2022-09-16

## PARKING LOT AND SIDEWALK NOTES

NOT TO SCALE




GENERAL NOTES:
I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.
O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.
H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.

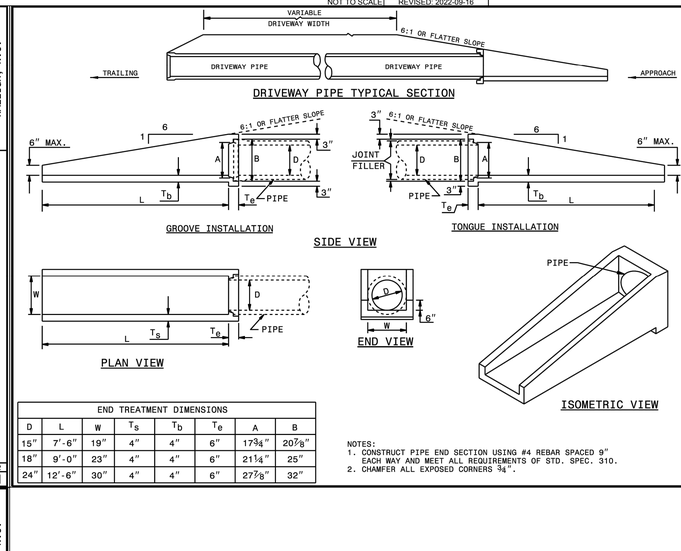
APPROVED SUITABLE LOCAL MATERIAL.
TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.
LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.

DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.
REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.
SPRINGLINE OF PIPE
SELECT BACKFILL MATERIAL CLASS III OR CLASS II, BELOW SPRINGLINE.
UNDISTURBED EARTH MATERIAL
SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.
1-24

ROADWAY STANDARD DRAWING FOR
**METHOD OF PIPE INSTALLATION** RIGID PIPE

SHEET 2 OF 2
**300.01**



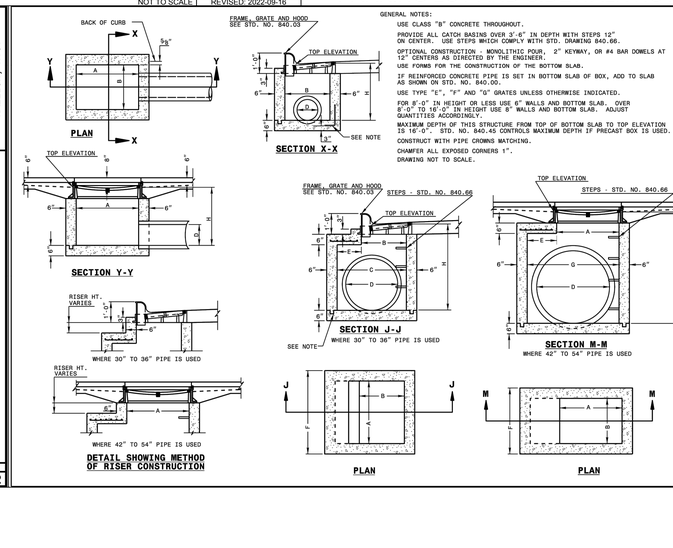

| END TREATMENT DIMENSIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| D | L | W | Ts | Tb | Te | A | B |
| 15" | 7'-6" | 19" | 4" | 4" | 6" | 17¾" | 20⅞" |
| 18" | 9'-0" | 23" | 4" | 4" | 6" | 21¼" | 25" |
| 24" | 12'-6" | 30" | 4" | 4" | 6" | 27⅞" | 32" |

NOTES:
1. CONSTRUCT PIPE END SECTION USING #4 REBAR SPACED 9" EACH WAY AND MEET ALL REQUIREMENTS OF STD. SPEC. 310.
2. CHAMFER ALL EXPOSED CORNERS ¾".

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.
1-24

ROADWAY STANDARD DRAWING FOR
**PARALLEL PIPE END SECTION** FOR 15" TO 24" PIPE
PRECAST CONCRETE SECTION

SHEET 1 OF 1
**310.02**



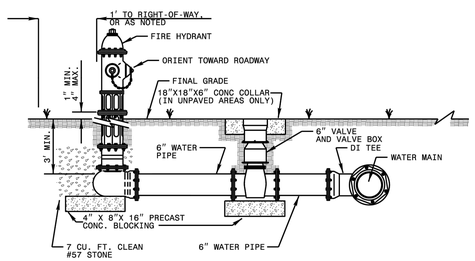

GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.
FOR 8'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 8'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.
MAXIMUM DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 16'-0". STD. NO. 840.45 CONTROLS MAXIMUM DEPTH IF PRECAST BOX IS USED.
CONSTRUCT WITH PIPE CROWNS MATCHING.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.
1-24

ROADWAY STANDARD DRAWING FOR
**CONCRETE CATCH BASIN**
12" THRU 54" PIPE

SHEET 1 OF 2
**840.02**

NOTES:
1. THIS DETAIL SHOWS THE TYPICAL FINAL FIRE HYDRANT CONFIGURATION AFTER INSTALLATION OF A PROPOSED FIRE HYDRANT, RECONNECTION OF AN EXISTING FIRE HYDRANT, OR RELOCATION OF A FIRE HYDRANT.
2. KEEP DRAIN PORTS FREE FROM OBSTRUCTION.
3. RESTRAIN ALL PIPE JOINTS AND FITTINGS. ACCEPTABLE TYPES OF RESTRAINT INCLUDE RESTRAINING GLANDS; RESTRAINED, PUSH-ON JOINTS; AND 3/4" BITUMINOUS COATED, ALL-THREAD RESTRAINING RODS. THRUST BLOCKS ARE NOT AN ACCEPTABLE TYPE OF RESTRAINT.
4. FOR RELOCATED OR RECONNECTED FIRE HYDRANTS,VERIFY THE VALVE IS RESTRAINED TO THE MAIN. PROVIDE APPROPRIATE RESTRAINT.
5. HYDRANT LOCATION APPLIES TO PROPOSED AND RELOCATED FIRE HYDRANTS.
6. LOCATE FIRE HYDRANT WITH 3' HORIZONTAL CLEARANCE FROM ABOVE GROUND OBJECTS.
7. PROVIDE A MINIMUM OF 3' COVER OVER ALL SECTIONS OF HORIZONTAL PIPE. USE FITTINGS AS NECESSARY.
8. TAPPING SLEEVES MAY BE USED ON EXISTING MAINS IN LIEU OF DI TEES.
9. LOCATE FIRE HYDRANT OUTSIDE OF THE VEHICLE RECOVERY AREA, ADJACENT TO THE R/W LINE, OR IN A PROTECTED AREA.




STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.
1-24

ROADWAY STANDARD DRAWING FOR
**FIRE HYDRANT**

SHEET 1 OF 1
**1515.02**


THIS DRAWING PREPARED AT THE
**RALEIGH OFFICE**
5410 Trinity Road, Suite 102 | Raleigh, NC 27607
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YOUR VISION ACHIEVED THROUGH OURS.

NORTH CAROLINA PROFESSIONAL SEAL 048231 ENGINEER JACOB C. DOOLEY
06/09/2026

| REVISION DESCRIPTION | DATE |
|---|---|
| NCDOT ROADWAY EXHIBIT SUBMITTAL #1 | 03/02/2026 |
| NCDEQ, NCDOT, TOWN OF ERWIN, HRVI RESUBMITTALS | 03/20/2026 |
| HRVI RESUBMITTAL | 04/29/2026 |
| HRVI SUBMITTAL | 05/20/2026 |
| HRVI SUBMITTAL #4 | 06/09/2026 |

DATE
12/17/2025
DRAWN BY
332
DESIGNED BY
J. DOOLEY
CHECKED BY
J. DOOLEY
SCALE
AS SHOWN

ISSUED FOR CONSTRUCTION

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ERWIN, HARNETT COUNTY, NCDEQ, AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

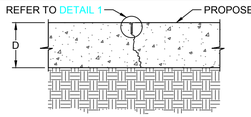
**TIMMONS GROUP**
NORTH CAROLINA LICENSE NO. C-1652

CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC
TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA
NOTES AND DETAILS

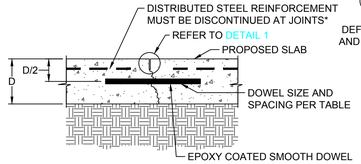
JOB NO.
37630.232
SHEET NO.
C7.2


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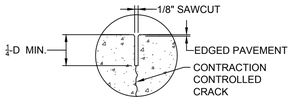

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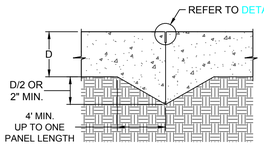

1 PLAIN PAVEMENT CONTRACTION JOINT, UNDOWELED
(ALL PAVEMENTS, SHORT SPACING)



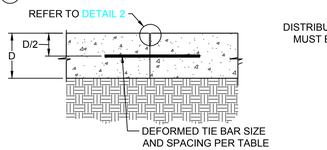

2 REINFORCED PAVEMENT CONTRACTION JOINT, DOWELED
(LONG JOINT SPACING OR ODD-SHAPED SLABS)
* MACRO FIBERS CAN BE USED INSTEAD OF DISTRIBUTED STEEL - REFER TO NOTES



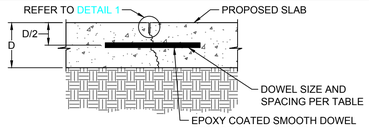

DETAIL 1 - CONTRACTION JOINTS
NO SCALE



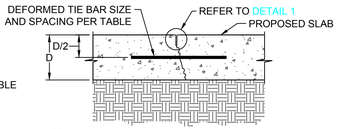

5 THICKENED EDGE CONSTRUCTION JOINT



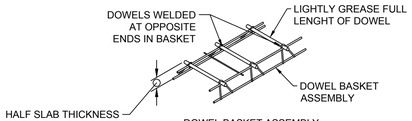

8 HINGED CONSTRUCTION JOINT
MAY BE USED FOR A LONGITUDINAL JOINT NEAR PAVEMENT EDGE TO PREVEDNT SLAB MIGRATION OR FOR A TRANSVERSE JOINT THAT DOES NOT ALIGN WITH THE REGULARLY SPACED JOINTS N ADJACENT LANES.



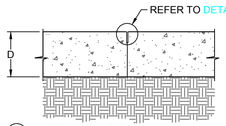

3 PLAIN PAVEMENT CONTRACTION JOINT, DOWELED
(NORMALLY FOR HEAVY DUTY PAVEMENTS, 7" OR GREATER)



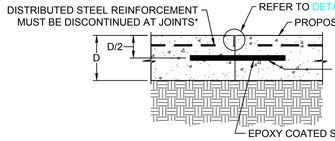

4 HINGED CONTRACTION JOINT
MAY BE USED FOR A LONGITUDINAL JOINT NEAR PAVEMENT EDGE TO PREVEDNT SLAB MIGRATION OR FOR A TRANSVERSE JOINT THAT DOES NOT ALIGN WITH THE REGULARLY SPACED JOINTS N ADJACENT LANES.




DOWEL BASKET ASSEMBLY
NO SCALE




6 CONSTRUCTION JOINT
CONSTRUCTION JOINTS TO BE USED ON PIPE CHASES AND BETWEEN CONCRETE POURS ONLY.




9 REINFORCED PAVEMENT CONSTRUCTION JOINT, DOWELED
(LONG JOINT SPACING OR ODD-SHAPED SLABS)
* MACRO FIBERS CAN BE USED INSTEAD OF DISTRIBUTED STEEL - SEE NOTES

| JOINT SPACING TABLE | | |
|---|---|---|
| PAVEMENT THICKNESS (INCHES) | MAXIMUM SPACING (FEET)* | RECOMMENDED SPACING (FEET) |
| 4 | 8x8 | 6x6 |
| 4.5 | 10x10 | 8x8 |
| 5 | 12.5x12.5 | 10x10 |
| 5.5 | 12.5x12.5 | 12x12 |
| 6 | 15x15 | 12x12 |
| 7 OR MORE | 15x15 | 13x13 |

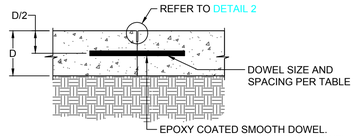
* PER ACI 330

| LOAD TRANSFER DOWEL SIZE AND SPACING FOR CONSTRUCTION AND CONTRACTION JOINTS (IF REQUIRED)* | | | | |
|---|---|---|---|---|
| PAVEMENT THICKNESS (INCHES) | IMPERIAL BAR SIZE | DOWEL DIA. (INCHES) | CONSTRUCTION JOINT DOWEL LENGTH (INCHES) | CONTRACTION JOINT DOWEL LENGTH (INCHES) |
| LESS THAN 5" | NOT REQUIRED | | | |
| 5-6 | #6 | 0.75 | 10 | 13 |
| 7 | #8 | 1.0 | 13 | 16 |
| 8 | #9 | 1.0 | 13 | 16 |
| 9-11 | #10 | 1.25 | 15 | 18 |

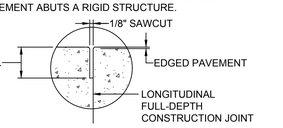
*TABLE BASED ON ACI 360R-10. MAXIMUM JOINT OPENING OF 0.20 INCHES. DOWEL SPACING IS 12" ON CENTER. SPACINGS ARE BASED ON DOWELS IN DIRECT CONTACT WITH A THIN BOND BREAKER (GREASE). CAREFULLY ALIGN AND SUPPORT DOWELS DURING CONCRETE OPERATIONS. MISALIGNED DOWELS MAY LEAD TO CRACKING. TOTAL DOWEL LENGTH INCLUDES ALLOWANCES MADE FOR JOINT OPENING AND MINOR ERRORS IN POSITIONING DOWELS.

| LENGTHS AND SPACINGS FOR #4, 1/2" DIA. TIE BARS* | | | | |
|---|---|---|---|---|
| PAVEMENT THICKNESS (INCHES) | TIE BAR LENGTH (INCHES) | TIE BAR SPACING (INCHES) DISTANCE TO NEAREST FREE EDGE OR TO NEAREST JOINT WHERE MOVEMENT CAN OCCUR | | |
| | | 12 FEET OR LESS | 14 FEET | 16-24 FEET |
| 4-5 | 24 | 30 | 30 | 28 |
| 5.5 | 24 | 30 | 30 | 25 |
| 6 | 24 | 30 | 30 | 23 |
| 6.5 | 24 | 30 | 30 | 21 |
| 7 | 24 | 30 | 30 | 20 |
| 7.5 | 24 | 30 | 30 | 18 |
| 8 | 24 | 30 | 28 | 17 |
| 8.5 | 24 | 30 | 26 | 16 |
| 9 | 30 | 36 | 30 | 24 |

* PER ACI 330




7 SMOOTH DOWEL CONSTRUCTION JOINT
REFER TO APPLICABLE DETAIL FOR PAVEMENT AND/OR CURB AND GUTTER DESIGN. PROVIDE EXPANSION JOINT WHERE CONCRETE PAVEMENT ABUTS A RIGID STRUCTURE.




DETAIL 2 - FULL-DEPTH CONSTRUCTION JOINTS
NO SCALE

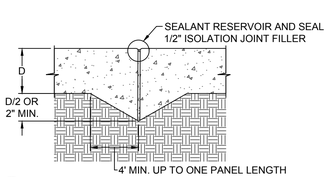
REINFORCEMENT NOTES:
SYNTHETIC STRUCTURAL MACRO FIBERS AND WELDED WIRE MESH ARE BOTH USED IN CONCRETE PAVEMENTS AS A POST CRACK CONTROL REINFORCEMENT WHICH MEANS THEY DO NOT PREVENT CRACKS FROM HAPPENING. BOTH STOP THE CRACKS FROM OPENING UP. FIBERS HAVE AN ADVANTAGE BECAUSE THEY ARE DISPERSED THROUGHOUT THE PAVEMENT FROM TOP TO BOTTOM, ENGAGING CRACKS IMMEDIATELY AS THEY START TO HAPPEN AND PREVENTING THEM FROM OPENING UP. WELDED WIRE MESH IS TYPICALLY IN THE TOP THIRD OF THE PAVEMENT WHICH KEEPS THE CRACK OPENINGS TIGHT.

ADDITIONAL BENEFITS OF FIBERS:
- REDUCES PLASTIC SHRINKAGE AND PLASTIC SETTLEMENT CRACKING
- PROVIDES SUPERIOR MULTI-DIMENSIONAL SECONDARY REINFORCEMENT AS AN ALTERNATE TO WELDED WIRE MESH, LIGHT REBAR, AND STEEL FIBERS
- IMPROVES THE RESIDUAL STRENGTH OF CONCRETE
- IMPROVES IMPACT, SHATTER, AND ABRASION RESISTANCE OF CONCRETE
- ENHANCES THE DURABILITY AND TOUGHNESS OF CONCRETE

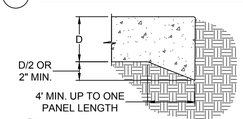
DOWEL INSTALLATION - BUTT JOINT
CONTRACTOR'S OPTION

METHOD A: DRILL HOLES ¼" DIA. LARGER THAN BAR, FILL HOLE WITH EPOXY RESIN AND INSTALL COATED DOWEL. GREASE EXPOSED HALF.

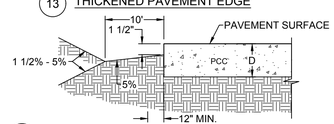
METHOD B: SET DOWELS THROUGH HOLES IN FORMS.




10 THICKENED EDGE ISOLATION JOINT

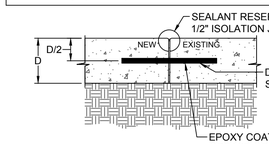



13 THICKENED PAVEMENT EDGE




15 RAISED EDGE CONCRETE PAVEMENT- NO CURB

NOTE:
1. REFER TO CIRCLE K CONCRETE PAVEMENT PARKING LOT DESIGN MANUAL REGARDING FIBER REINFORCEMENT FOR CRACK CONTROL.

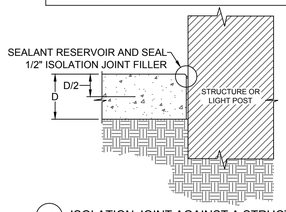



11 SMOOTH DOWEL ISOLATION JOINT

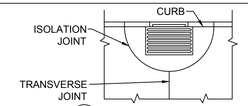
DOWEL INSTALLATION - ISOLATION JOINT
CONTRACTOR'S OPTION

METHOD A: DRILL HOLES ¼" DIA. LARGER THAN BAR INTO EXISTING SLAB, FILL HOLE WITH EPOXY RESIN AND INSTALL COATED DOWEL. GREASE EXPOSED HALF.

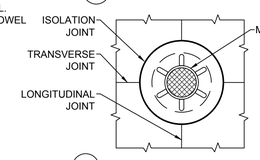
METHOD B: SET DOWELS THROUGH HOLES IN FORMS.



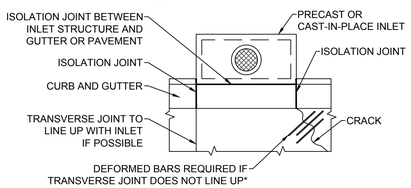

16 ISOLATION JOINT AGAINST A STRUCTURE




12 CATCH BASIN BOXOUT



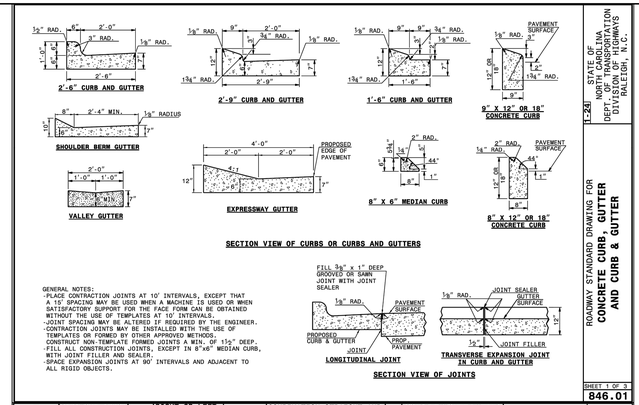

14 MANHOLE OR INLET BOS

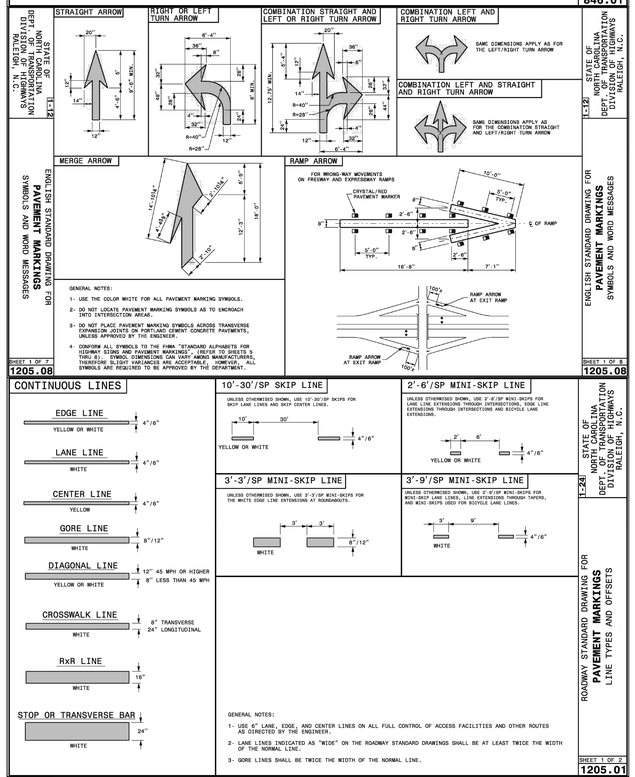



17 RECTANGULAR DROP INLET

# CONCRETE JOINT DETAILS AND NOTES

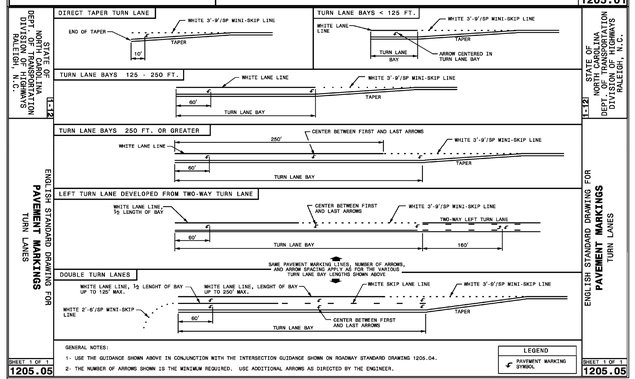
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ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ERWIN, HARNETT COUNTY, NCDEQ, AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS


TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652


CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC
TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA
NOTES AND DETAILS

JOB NO. 37630.232
SHEET NO. C7.3

NORTH CAROLINA PROFESSIONAL SEAL 048231 ENGINEER JACOB C. DOOLEY
06/09/2026


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| REVISION DESCRIPTION | DATE |
|---|---|
| NCDOT ROADWAY EXHIBIT SUBMITTAL #1 | 03/02/2026 |
| NCDEQ, NCDOT, TOWN OF ERWIN, HRVI RESUBMITTALS | 03/20/2026 |
| HRVI RESUBMITTAL | 04/29/2026 |
| HRVI SUBMITTAL | 05/20/2026 |
| HRVI SUBMITTAL #4 | 06/09/2026 |

DATE 12/17/2025
DRAWN BY 332
DESIGNED BY J. DOOLEY
CHECKED BY J. DOOLEY
SCALE AS SHOWN

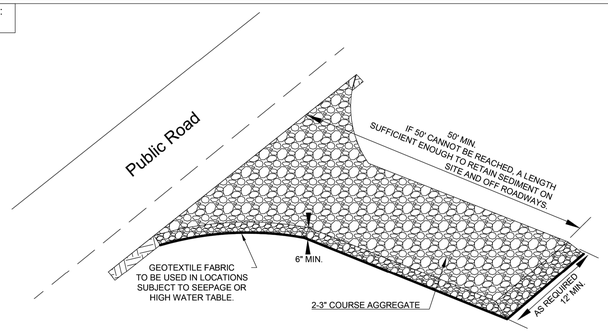

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# CK-##1
REVISED: 2022-09-16

DATE:

PAGE:




Construction:
1. Clear the entrance and exit area of all vegetation, roots, and other objectionable material and properly grade it.
2. Place the gravel to the specific grade and dimensions shown on the plans, and smooth it.
3. Provide drainage to carry water to a sediment trap or other suitable outlet.
4. Use geotextile fabrics in order to improve stability of the foundation in locations subject to seepage or high water table.

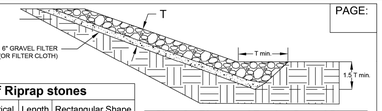
Maintenance:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater. Make any required repairs immediately.
2. Maintain the gravel pad in a condition to prevent mud or sediment from leaving the construction site. This may require periodic topdressing with 2-inch stone.
3. Sediment on roadways is to be removed immediately by broom and shovel, either by manual or mechanical means, and not to be washed off where it has the potential to enter a stream, drainage way or storm drain system.

## TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

DATE:

PAGE:




Subgrade Preparation:
1. Prepare the subgrade for riprap and filter to the required lines and grades shown on the plans.
2. Compact any fill required in the subgrade to a density approximating that of the surrounding undisturbed material or overfill depressions with riprap.
3. Remove brush, trees, stumps, and other objectionable material.

Sand and Gravel Filter Blanket:
1. Place the filter blanket immediately after the ground foundation is prepared.
2. When using gravel, spread filter stone in a uniform layer to the specified depth.
3. When more than one layer of filter material is used, spread the layers with minimal mixing.

Synthetic Filter Fabric:
1. Place the cloth filter directly on the prepared foundation.
2. Overlap the edges by at least 12 inches, and space anchor pins every 3 feet along the overlap.
3. Bury the upstream end of the cloth a minimum of 12 inches below ground and bury the lower end of the cloth or over lap with the next section as required.
4. If damage occurs while placing riprap, remove the riprap, and repair the sheet by adding another layer of filter material with a minimum overlap of 12 inches around the damaged area. If damage is extensive, remove and replace the entire sheet.
5. If placing large stones or machine placing is difficult, a 4 inch layer of fine gravel or sand may be needed to protect the filter cloth.

Maintenance:
In general, once a riprap installation has been properly designed and installed it requires very little maintenance. Riprap should be inspected periodically for scour or dislodged stones. Control of weed and brush growth may be needed in some locations.

**Size of Riprap stones**

| Weight (lb) | Mean Spherical Diameter (ft) | Length (ft) | Rectangular Shape Width/Height (ft) |
|---|---|---|---|
| 50 | 0.8 | 1.4 | 0.5 |
| 100 | 1.1 | 1.8 | 0.6 |
| 150 | 1.3 | 2.0 | 0.7 |
| 300 | 1.6 | 2.6 | 0.9 |
| 500 | 1.9 | 3.0 | 1.0 |
| 1000 | 2.2 | 3.7 | 1.3 |
| 1500 | 2.6 | 4.7 | 1.5 |
| 2000 | 2.8 | 5.4 | 1.8 |
| 4000 | 3.6 | 6.0 | 2.0 |
| 6000 | 4.0 | 6.9 | 2.3 |
| 8000 | 4.5 | 7.6 | 2.5 |
| 20,000 | 6.1 | 10.0 | 3.3 |

Stone Placement:
1. Placement of riprap should follow immediately after placement of the filter.
2. Place so that riprap forms a dense, well-graded mass of stone with a minimum of voids.
3. Place to its full thickness in one operation.
4. Do not place by dumping through chutes or other methods that cause segregation of stone sizes.
5. Take care not to dislodge underlying base or filter when placing stone.
6. The toe of the riprap slope should be keyed to a stable foundation at its base.
7. The toe should be excavated to a depth about 1.5 times the design thickness of the riprap and extend horizontally from the slope, as shown above.
8. Hand placing may be necessary to achieve the proper distribution of stone sizes to produce a relatively smooth, uniform surface.

**Sizes for Riprap and Erosion Control Stone Specified by NCDOT**

| Riprap | | Erosion Control | |
|---|---|---|---|
| Class 1 | Class 2 | Class A | Class B |
| 5-200 lb | 25-250 lb | 2"-6" | 5"-15" |
| 30% shall weigh a minimum of 60 lbs each | 60% shall weigh a minimum of 100 lbs each | | |
| No more than 10% shall weigh less than 15 lbs each | No more than 5% shall weigh less than 50 lbs each | 10% tolerance top and bottom sizes | |
| | | Equally distributed, no gradation specified | Equally distributed, no gradation specified |

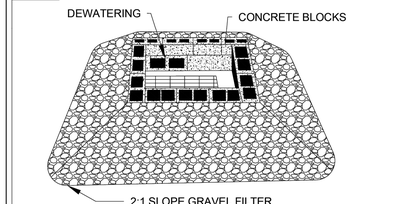
Riprap should be a well-graded mixture with 50% by weight larger than the specified design size.
Diameter of the largest stone size in the mix should be 1.5 times the $d_{50}$ size with smaller sizes grading down to 1 inch.

## RIP RAP

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

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NOTES:
1. Lay one block, on each side of the structure, on its side in the bottom row to allow pool drainage. The foundation should be excavated at least 2 inches below the crest of the storm drain. Place the bottom row of blocks against the edge of the storm drain for lateral support and to avoid washouts when overflow occurs. If needed, give lateral support to subsequent rows by placing 2 inch x 4 inch wood studs through block openings.
2. Carefully fit hardware cloth or comparable wire mesh with 1/2-inch openings over all block openings to hold gravel in place.
3. Use clean gravel 1/2 to 3/4 inch in diameter, placed 2 inches below the top of the block on a 2:1 slope or flatter and smooth it to an even grade. NCDOT #57 washed stone is recommended.

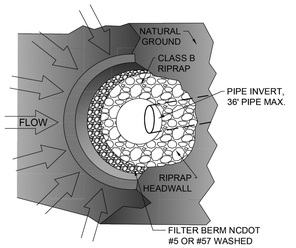
MAINTENANCE:
1. Inspect all measures at least weekly and after every rainfall of 1.0 inch or greater; repair immediately.
2. Remove sediment as necessary to provide adequate storage volume for subsequent rains.
3. When the contributing drainage area has been adequately stabilized, remove all materials and any unstable soil, and either salvage or dispose of it properly. Bring the disturbed area to proper grade, then smooth and compact before stabilizing.

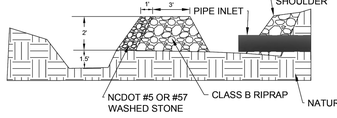
## BLOCK AND GRAVEL INLET PROTECTION (TEMPORARY)

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

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NOTES:
1. Clear the area of all debris that might hinder excavation and disposal of spoil.
2. Install the Class B or Class 1 riprap in a semi-circle around the pipe inlet. The stone should be built up higher on each end where it ties into the embankment. The minimum crest width of the riprap should be 3 feet, with a minimum bottom width of 11 feet. The minimum height should be 2 feet, but also 1 foot lower than the embankment of diversions.
3. A 1 foot thick layer of NC DOT #5 or #57 stone should be placed on the outside slope of the riprap.
4. The sediment storage area should be excavated around the outside of the stone horseshoe 18 inches below natural grade.
5. When contributing drainage area has been stabilized, remove the pipe and rock, fill depression, establish final grading elevations, compact the area properly, and stabilize with ground cover.

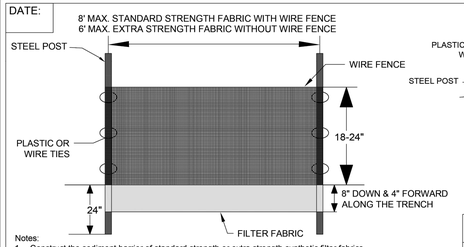
MAINTENANCE:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater and repair immediately.
2. Remove sediment and restore the sediment storage area to its original dimensions when the sediment has accumulated to one-half the design depth of the trap.
3. Place the sediment that is removed in the designated disposal area and replace the contaminated part of the gravel facing.
4. Check the structure for damage. Any riprap displaced from the stone horseshoe must be replaced immediately.
5. After all the sediment-producing areas have been permanently stabilized, remove the structure and all the unstable sediment. Smooth the area to blend with the adjoining areas and provide permanent ground cover.

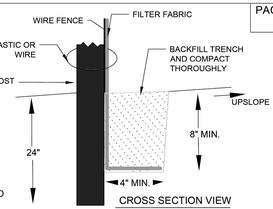
## ROCK PIPE INLET PROTECTION

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

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Notes:
1. Construct the sediment barrier of standard strength or extra strength synthetic filter fabrics.
2. Ensure that the height of the sediment fence does not exceed 24 inches above the ground. (Higher fences may impound volumes of water sufficient to cause failure of the structure)
3. Construct the filter fabric from a continuous roll cut to the length of the barrier to avoid joints. When joints are necessary, securely fasten the filter cloth only at a support post with 4 feet minimum overlap to the next post.
4. Support standard strength filter fabric by wire mesh fastened securely to the upslope side of the posts. Extend the wire mesh support to the bottom of the trench. Fasten the wire reinforcement, then fabric on the upslope side of the fence post. Wire or plastic zip ties should have a minimum 50 pound tensile strength.
5. When a wire mesh support fence is used, space posts a maximum of 8 feet apart. Supports should be driven securely into the ground a minimum of 24 inches. Wire mesh should be a minimum 14-gauge with 6 inch mesh spacing.
6. Extra strength filter fabric with 6 foot post spacing does not require a wire mesh support fence. Securely fasten the filter fabric directly to posts. Wire or plastic zip ties should have a minimum of 50 pound tensile strength.
7. Excavate the trench approximately 4 inches wide and 8 inches deep along the proposed line of the posts and upslope from the barrier.
8. Place 12 inches of fabric along the bottom and side of the trench.
9. Backfill the trench with soil placed over the filter fabric and compact. Thorough compaction of the backfill is critical to silt fence performance.
10. Do not attach filter fabric to existing trees.
11. Do not place across ditches, streams, or any other areas of concentrated flow.

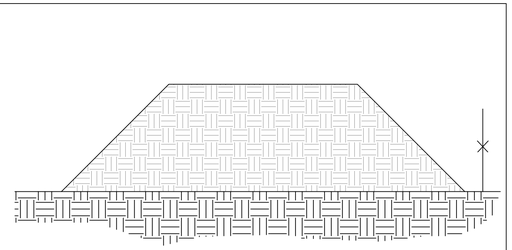
**Max. Slope Length and Slope for Which Sediment Fence is Applicable**

| Slope | Slope Length (ft) | Max. Area ($ft^2$) |
|---|---|---|
| <2% | 100 | 10,000 |
| 2 to 5% | 75 | 7,500 |
| 5 to 10% | 50 | 5,000 |
| 10 to 20% | 25 | 2,500 |
| >20% | 15 | 1,500 |

Maintenance:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater. Make any required repairs immediately.
2. Should the fabric of a sediment fence collapse, tear, decompose, or become ineffective, replace it promptly.
3. Remove sediment deposits as necessary to provide adequate storage volume for the next rain and reduce pressure on the fence. Take care to avoid undermining the fence during cleanouts.
4. Remove all fencing materials and unstable sediment deposits and bring the area to grade and stabilize it after the contributing drainage area has been properly stabilized.

## SEDIMENT FENCE

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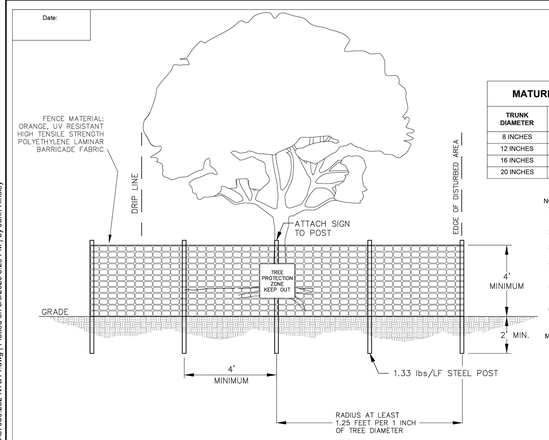
NOTES

SOIL SAMPLING, SOILS EXCAVATED SHALL BE STOCKPILED AT A DESIGNATED SOUL STAGING AREA ONSITE. ALL BOUNDARIES OF STOCK PILES SHALL BE WRAPPED IN SILT FENCE AND OUTLETS ON THE LOW ENDS.

STOCKPILE AREA
NO SCALE

Date:

Page:




**MATURE TREE PROTECTION ZONE RADIUS**

| TRUNK DIAMETER | GOOD PROTECTION | BETTER PROTECTION | BEST PROTECTION |
|---|---|---|---|
| 8 INCHES | 10 FEET | 12 FEET | 20 FEET |
| 12 INCHES | 15 FEET | 18 FEET | 30 FEET |
| 16 INCHES | 20 FEET | 24 FEET | 40 FEET |
| 20 INCHES | 25 FEET | 30 FEET | 50 FEET |

NOTES:
1. Leave critical areas (such as flood plains, steep slopes and wetlands) with desirable trees in their natural condition or only partially cleared.
2. Select trees to be preserved before siting roads, buildings or other structures.
3. Minimize trenching in areas with trees. Place several utilities in the same trench.
4. Prohibit or restrict access to tree protection zones(TPZ). Post "Keep Out" signs on all sides of fencing and do not store construction equipment or materials in TPZ.
5. Monitor trees using a professional or train your staff to monitor tree health during and after construction on a regular, frequent basis.
6. Assign a crew member to weekly TPZ fence integrity checks. Repair and replace TPZ fencing as needed.

MAINTENANCE:
1. Prune any damaged trees. In spite of precautions, some damage to protected trees may occur. In such cases, repair any damage to the crown, trunk, or root system immediately.
2. Repair roots by cutting off the damaged areas and painting them them with tree paint. Spread peat moss or moist topsoil over exposed roots.
3. Repair damage to bark by trimming around the damaged area, taper the cut to provide drainage and paint with tree paint.
4. Cut off all damaged tree limbs above the tree collar at the trunk or main branch. Use three separate cuts to avoid peeling bark from healthy areas of the tree.

NORTH CAROLINA Environmental Quality
EFFECTIVE DATE: 11/1/2020

## TREE PROTECTION ZONES

## MATERIALS
(SEDIMENT FENCE)

1. Use a synthetic filter fabric of at least 95% by weight of polyolefins or polyester, which is certified by the manufacturer or supplier as conforming to the requirements in astm d 6461, which is shown in part in table 6.62b.
2. Synthetic filter fabric should contain ultraviolet ray inhibitors and stabilizers to provide a minimum of 6 months of expected usable construction life at a temperature range of 0 to 120° f.
3. Ensure that post for sediment fences are 1.25 lb/linear ft minimum steel with a minimum length of 5 feet. Make sure that steel posts have projections to facilitate fastening the fabric.
4. For reinforcement of standard strength filter fabric, use wire fence with a minimum 14 gauge and a maximum mesh spacing of 6 inches.

## CONSTRUCTION SPECIFICATIONS
(SEDIMENT FENCE)

1. Construct the sediment barrier of standard strength or extra strength synthetic filter fabrics.
2. Ensure that the height of the sediment fence does not exceed 24 inches above the ground surface. (Higher fences may impound volumes of water sufficient to cause failure of the structure.)
3. Construct the filter fabric from a continuous roll cut to the length of the barrier to avoid joints. When joints are necessary, securely fasten the filter cloth only at a support post with 4 feet minimum overlap to the next post.
4. Support standard strength filter fabric by wire mesh fastened securely to the **upslope** side of the posts. Extend the wire mesh support to the bottom of the trench. Fasten the wire reinforcement, then fabric on the upslope side of the fence post. Wire or plastic zip ties should have minimum 50 pound tensile strength.
5. When a wire mesh support fence is used, space posts a maximum of 8 feet apart. Support posts should be driven securely into the ground a minimum of 24 inches.
6. Extra strength filter fabric with 6 feet post spacing does not require wire mesh support fence. Securely fasten the filter fabric directly to posts. Wire or plastic zip ties should have minimum 50 pound tensile strength.
7. Excavate a trench approximately 4 inches wide and 8 inches deep along the proposed line of posts and upslope from the barrier (Figure 6.62a).
8. Place 12 inches of the fabric along the bottom and side of the trench.
9. Backfill the trench with soil placed over the filter fabric and compact. Thorough compaction of the backfill is critical to silt fence performance.
10. Do not attach filter fabric to existing trees.

**SEDIMENT FENCE INSTALLATION USINGTHE SLICING METHOD**

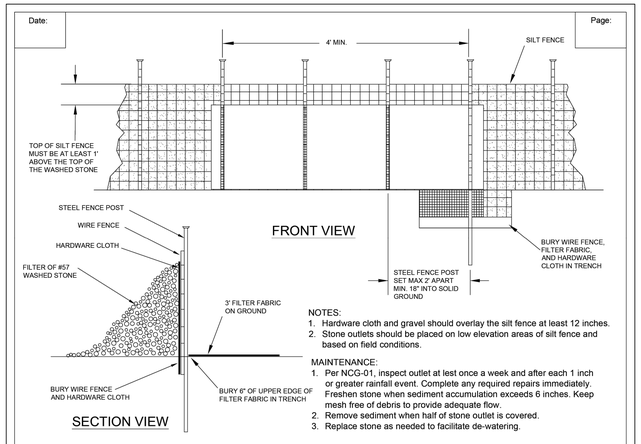
Instead of excavating a trench, placing fabric and then backfilling trench, sediment fence may be installed using specially designed equipment that inserts the fabric into a cut sliced in the ground with a disc (Figure 6.62b).

### Installation Specifications

1. The base of both end posts should be at least one foot higher than the middle of the fence. Check with a level if necessary.
2. Install posts 4 feet apart in critical areas and 6 feet apart on standard applications.
3. Install posts 2 feet deep on the downstream side of the silt fence, and as close as possible to the fabric, enabling posts to support the fabric from upstream water pressure.
4. Install posts with the nipples facing away from the silt fabric.
5. Attach the fabric to each post with three ties, all spaced within the top 8 inches of the fabric. Attach each tie diagonally 45 degrees through the fabric, with each puncture at least 1 inch vertically apart. Also, each tie should be positioned to hang on a post nipple when tightened to prevent sagging.
6. Wrap approximately 6 inches of fabric around the end posts and secure with 3 ties.
7. No more than 24 inches of a 36 inch fabric is allowed above ground level.
8. The installation should be checked and corrected for any deviations before compaction.
9. Compaction is vitally important for effective results. Compact the soil immediately next to the silt fence fabric with the front wheel of the tractor, skid steer, or roller exerting at least 60 pounds per square inch. Compact the upstream side first, and then each side twice for a total of 4 trips.

Date:

Page:




NOTES:
1. Hardware cloth and gravel should overlay the silt fence at least 12 inches.
2. Stone outlets should be placed on low elevation areas of silt fence and based on field conditions.

MAINTENANCE:
1. Per NCG-01, inspect outlet at lest once a week and after each 1 inch or greater rainfall event. Complete any required repairs immediately. Freshen stone when sediment accumulation exceeds 6 inches. Keep mesh free of debris to provide adequate flow.
2. Remove sediment when half of stone outlet is covered.
3. Replace stone as needed to facilitate de-watering.

NORTH CAROLINA Environmental Quality
EFFECTIVE DATE: 11/1/2020

## SILT FENCE OUTLET

ISSUED FOR CONSTRUCTION

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ERWIN, HARNETT COUNTY, NCDEQ, AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS


NORTH CAROLINA PROFESSIONAL SEAL 048231 ENGINEER JACOB C. DOOLEY
06/09/2026

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| DATE | REVISION DESCRIPTION |
|---|---|
| 03/02/2026 | NCDOT ROADWAY EXHIBIT SUBMITTAL #1 |
| 03/20/2026 | NCDEQ, NCDOT, TOWN OF ERWIN, HRW RESUBMITTALS |
| 04/29/2026 | HRW RESUBMITTAL |
| 05/20/2026 | NCDOT SUBMITTAL |
| 06/09/2026 | HRW SUBMITTAL #4 |

DATE
12/17/2025

DRAWN BY
332

DESIGNED BY
J. DOOLEY

CHECKED BY
J. DOOLEY

SCALE
AS SHOWN

# TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

# CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC
TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA

## NOTES AND DETAILS

JOB NO.
37630.232

SHEET NO.
C7.4

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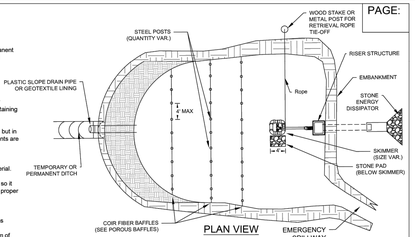
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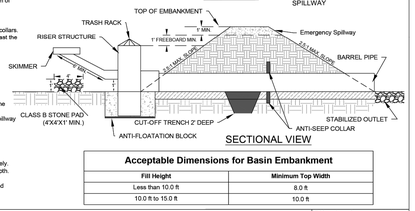
NOTES:

1. Install temporary sediment basins to the approved design. If the basin will eventually be converted to a permanent SCM device, the basin must function as a temporary sediment basin and meet the following parameters until completion of the project:
   - Maximum Drainage Area: 100 acres
   - Minimum Sediment Storage Volume: 1800 cubic feet per acre of disturbed area
   - Minimum Surface Area: 435 square feet per cfs of $Q_{10}$ peak inflow
   - Minimum dewatering time: 48 hours
2. Clear, grub, and strip topsoil from areas under the embankment to remove trees, vegetation, roots, and other objectionable material. Delay clearing the pool area until the dam is complete. Stockpile all topsoil or soil containing organic matter for use on the outer shell of the embankment to facilitate vegetative establishment.
3. Place temporary sediment control measures below the basin and stockpile as needed.
4. Excavate a cut-off trench along the center line of the earth fill embankment. Cut trench to stable soil material, but in no case make it less than 2 feet deep with maximum side slopes no steeper than 1:1. Compaction requirements are the same as those for the embankment.
5. Extend the cut-off trench into both abutments to at least the elevation of the riser crest.
6. Keep the trench dry during backfilling and compaction operations.
7. Fill material should be clean mineral soil, free of rocks, woody vegetation, rocks, and other objectionable material. Areas of approved fill should be shown on the plans.
8. Scarify areas on which fill is to be placed prior to placing. Ensure that fill material contains sufficient moisture so it can be formed by hand into a ball without crumbling. If water can be squeezed out of the ball, it is too wet for proper compaction.
9. Place fill material in 6 to 8 inch continuous layers over the entire length of fill area and compact.
10. Construct the embankment to an elevation 10% higher than the design height to allow for settling.
11. Securely attach the riser to the barrel or barrel stub to make a watertight structural connection. All connections should be made using approved watertight assemblies.
12. If no riser structure is to be used, couple the skimmer arm directly into the embankment 1 foot from the bottom of the basin.
13. The arm pipe connecting the skimmer to the riser shall have a minimum length of 6 feet.
14. Place barrel and riser on a firm, smooth foundation of impervious soil.
15. Do not use pervious material such as sand, gravel, or crushed stone as backfill around the pipe or anti-seep collars.
16. Place fill material around the pipe spillway in 4-inch layers, and compact it under and around the pipe to at least the same density as the adjacent embankment.
17. Place a minimum depth of 2 feet of compacted backfill over the pipe spillway before crossing it with any construction equipment.
18. Anchor riser in place by concrete or other satisfactory means to prevent floatation.
19. In no case should the pipe conduit be installed by cutting a trench through the dam after the embankment is complete.
20. Install the emergency spillway in undisturbed soil.
21. Discharge water into the basin in a manner to prevent erosion.
22. Construct basin so that the disturbed area is minimized, divert surface water from bare areas and complete the embankment before the area is cleared.
23. Stabilize the emergency spillway embankment and all other disturbed area above the crest of the principal spillway immediately after construction.
24. Seed and place matting for erosion control on interior and exterior side slopes.
25. Install Porous Baffles as specified on following sheets.

MAINTENANCE:

1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater. Make any repairs immediately.
2. Remove sediment and restore basin to its original dimensions when it accumulates to one-half the design depth.
3. Place removed sediment in an area with sediment control measures to ensure no loss of sediment off-site.
4. Check the embankment, spillways, and outlet for erosion damage, and inspect the embankment for piping and settlement.
5. Remove all trash and other debris form the riser and pool area.




**Acceptable Dimensions for Basin Embankment**

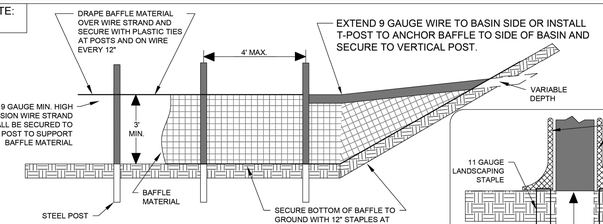
| Fill Height | Minimum Top Width |
|---|---|
| Less than 10.0 ft | 8.0 ft |
| 10.0 ft to 15.0 ft | 10.0 ft |

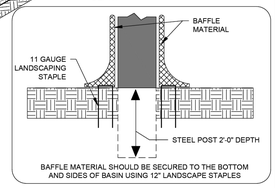
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# SEDIMENT BASIN

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NOTES:

1. Use matting made of 100% coconut fiber(coir) twine woven into high strength matrix.
2. Staples should be made of 0.125 inch diameter, new steel wire formed into a 'U' shape not less than 12 inches in length with a throat of 1 inch in width. The staples anchor the porous baffles into the sides and bottom of the basin.
3. Grade the basin so that the bottom is level front to back and side to side.
4. Install the coir fiber baffles immediately upon excavation of the basins.
5. Install posts across the width of the sediment trap.
6. Steel posts should be driven to a depth of 24 inches and spaced in a maximum of 4 feet apart. The top of the fabric should be a minimum of 6 inches higher than the invert of the spillway. Tops of the baffles should be a minimum of 2 inches lower than the top of the earthen embankment.
7. Install 3 coir fiber baffles in basins at drainage outlets with a spacing of 1/4 the basin length. 2 coir fiber baffles can be installed in the basins less than 20 feet in length with a spacing of 1/3 the basin length.
8. Attach a 9-gauge high tension wire strand to the steel posts at a height of 6 inches above the spillway elevation with plastic ties or wire fasteners to prevent sagging. If the temporary sediment basin will be converted to a permanent stormwater basin of a greater depth, the baffle height should be based on the pool depth during use as a temporary sediment basin.

MAINTENANCE:

1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater and repair immediately.
2. Maintain access to baffles. If the fabric collapses, tears, decomposes, or becomes ineffective, replace immediately.
3. Remove sediment deposits when it reaches half full. Replace if baffle fabric is damaged during clean-out operations. Sediment depth should never exceed half the designed storage depth.

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In accordance with the 2013 Design Manual Updates

# POROUS BAFFLES

## MATERIALS
(POROUS BAFFLES)

1. Use matting made of 100% coconut fiber (coir) twine woven into high strength matrix with the properties shown in table 6.6.5a.
2. Staples should be made of 0.125 inch diameter new steel wire formed into a "U" shape not less than 12 inches in length with a throat of 1 inch in width. The staples anchor the porous baffles into the sides and bottom of the basin.
3. Ensure that steel post form porous baffles area of a sufficient height to support baffles at desired height. Post should be approximately 1-3/8" wide measured parallel to the fence, and have a minimum weight of 1.25 lb/linear ft. The posts must be equipped with an anchor plate having a minimum area of 14.0 square inches and be of the self-fastener angle steel type to have a means of retaining wire and coir fiber mat in the desired position without displacement.
4. Use 9-gauge high tension wire for support wire.

| Coir Fiber Material Property Requirements | |
|---|---|
| Thickness | 0.30 in. minimum |
| Tensile Strength (Wet) | 900 x 680 lb/ft minimum |
| Elongation (Wet) | 69% x 34% maximum |
| Flow Velocity | 10-12 ft/sec |
| Weight | 20 oz/SY (680 g/m$^2$) minimum |
| Minimum Width | 6.5 feet |
| Open Area | 50% maximum |

Table 6.65a Specifications for Porous Baffle Material

## CONSTRUCTION SPECIFICATIONS
(POROUS BAFFLES)

1. Grade the basin so that the bottom is level front to back and side to side.
2. Install the coir fiber baffles immediately upon excavation of the basins.
3. Install posts across the width of the sediment trap (Practice 6.62, Sediment Fence).
4. Steel posts should be driven to a depth of 24 inches and spaced a maximum of 4 feet apart. The top of the fabric should be a minimum of 2 inches lower than the top of the earthen embankment.
5. Install at least three rows of baffles between the inlet and outlet discharge point. Basins less than 20 feet in length may use 2 baffles.
6. Attach a 9 gauge high tension wire stand to the steel post at a height of 6 inches above the spillway elevation with plastic ties or wire fasteners to prevent sagging. If the temporary sediment basin will be converted to a permanent stormwater basin of a greater depth, the baffle height should be based on the pool depth during use as a temporary sediment basin.
7. Extend 9 gauge minimum high tension wire strand to side of basin or install steel T-post to anchor baffle to side of basin and secure to vertical end posts as shown in Figure 6.65b.
8. Drape the coir fiber mat over the wire stand mounted at a height of 6 inches above the spillway elevation. Secure the coir fiber mat to the wire strand with plastic ties or wire fasteners. Anchor the matting to the sides and floor of the basin with 12 inch wire staples, approximately 1 ft apart, along the bottom and side slopes of the basin.
9. Do not splice the fabric, but use a continuous piece across the basin.
10. Adjustments may be required in the stapling requirements to fit individual site conditions.

## MAINTENANCE SPECIFICATIONS
(POROUS BAFFLES)

1. Inspect baffles at least once a week and after each rainfall. Make any required repairs immediately.
2. Be sure to maintain access to the baffles. Should the fabric of a baffle collapse, tear, decompose, or become ineffective, replace it promptly.
3. Remove sediment deposits when it reaches half full to provide adequate storage volume for the next rain and to reduce pressure on the baffles. Take care to avoid damaging the baffles during cleanout, and replace if damaged during cleanout operations. Sediment depth should never exceed half the designed storage depth.
4. After the contributing drainage area has been properly stabilized, remove all baffle materials and unstable sediment deposits, bring the area to grade, and stabilize it.

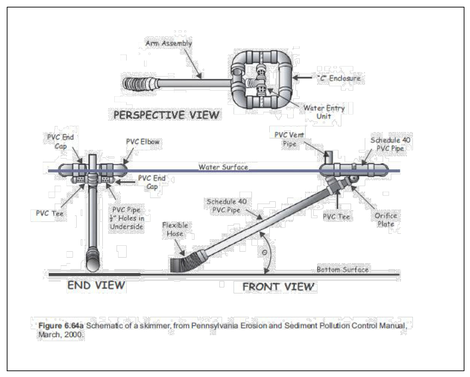



**Figure 6.64a** Schematic of a skimmer, from Pennsylvania Erosion and Sediment Pollution Control Manual, March, 2000.

## INSTALLATION SPECIFICATIONS
(SKIMMER)

1. Prevent the skimming device from settling into the mud by excavating a shallow pit under the skimmer or providing a low support under the skimmer of stone or timber.
2. Assemble the skimmer following the manufacturers instructions, or as designed.
3. Lay the assembled skimmer on the bottom of the basin with the flexible joint at the inlet of the barrel pipe. Attach the flexible joint to the barrel pipe and position the skimmer over the excavated pit or support. Be sure to attach a rope to the skimmer and anchor it to the side of the basin. This will be used to pull the skimmer to the side for maintenance.

## MAINTENANCE SPECIFICATIONS
(SKIMMER)

1. Inspect skimmer sediment basins at least weekly and after each significant (one-half inch or greater) rainfall event and repair immediately. Remove sediment and restore the basin to its original dimensions when sediment accumulates to one-half the height of the first baffle. Pull the skimmer to one side so that the sediment underneath it can be excavated. Excavate the sediment from the entire basin, not just around the skimmer or the first cell. Make sure vegetation growing in the bottom of the basin does not hold down the skimmer.
2. If the skimmer is clogged with trash and there is water in the basin, usually jerking on the rope will make the skimmer bob up and down and dislodge the debris and restore flow. If this does not work, pull the skimmer over to the side of the basin and remove the debris. Also check the orifice inside the skimmer to see if it is clogged; if so remove the debris.
3. If the skimmer arm is clogged, the orifice can be removed and the obstruction cleared with a plumber's snake or by flushing with water. Be sure and replace the orifice before repositioning the skimmer.
4. Freezing weather can result in ice forming in the basin. Some special preeautions should be taken in the winter to prevent the skimmer from plugging with ice.

## SEDIMENT BASIN REMOVAL SEQUENCE:

1. ONCE A GOOD STAND OF GRASS HAS BEEN ESTABLISHED AND APPROVAL FROM NCDEQ HAS BEEN OBTAINED, SEDIMENT BASINS SHALL BE REMOVED.
2. DEWATER BASINS USING A DEWATERING SOCK.
3. REMOVE SKIMMER DEVICE, SEDIMENT, PVC/HDPE PIPING, RISER OUTLET STRUCTURE, COIR FIBER BAFFLES AND RIPRAP APRONS.
4. BREACH DAMS AND USE DAM MATERIAL AND ASSOCIATED STOCKPILE TO FILL IN THE BASIN. GRADE THE BASIN AREA TO MATCH THE GRADE OF THE EXISTING CONDITIONS. ALL EXISTING DRAINAGE PATTERNS ARE TO BE REESTABLISHED. MAINTAIN POSITIVE DRAINAGE AT ALL TIMES.
5. SEED AND STABILIZE BASIN BOTTOM, SLOPES AND ALL DISTURBED AREAS IMMEDIATELY.

NOTIFICATION OF COMBINED SELF MONITORING AND SELF INSPECTION

THE SEDIMENTATION POLLUTION CONTROL ACT WAS AMENDED IN 2006 TO REQUIRE THAT PERSONS RESPONSIBLE FOR LAND DISTURBING ACTIVITIES INSPECT A PROJECT AFTER EACH PHASE OF THE PROJECT TO MAKE SURE THAT THE APPROVED EROSION CONTROL AND SEDIMENTATION CONTROL PLAN IS BEING FOLLOWED. RULES DETAILING THE DOCUMENTATION OF THESE INSPECTIONS TOOK EFFECT OCTOBER 1, 2010.

TO SIMPLIFY DOCUMENTATION OF SELF-INSPECTION REPORTS AND NPDES SELF-MONITORING REPORTS, DWQ AND DEMLR DEVELOPED A COMBINED FORM. THE SELF-INSPECTION PROGRAM IS SEPARATE FROM THE WEEKLY SELF-MONITORING PROGRAM OF THE NPDES STORMWATER PERMIT FOR CONSTRUCTION ACTIVITIES. THE FOCUS OF THE SELF-INSPECTION REPORT IS THE INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL MEASURES ACCORDING TO THE APPROVED PLAN. THE INSPECTIONS SHOULD BE CONDUCTED AFTER EACH PHASE OF THE PROJECT, AND CONTINUED UNTIL PERMANENT GROUND COVER IS ESTABLISHED. THE FORM CAN BE ACCESSED AT:
HTTP://DEQ.NC.GOV/ABOUT/DIVISIONS/ENERGY-MINERAL-LAND-RESOURCES/EROSION-SEDIMENT-CONTROL/FORMS

IF YOU HAVE QUESTIONS OR CANNOT ACCESS THE FORM, PLEASE CONTACT THE RALEIGH REGIONAL OFFICE AT (919) 791-4200.

1. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
2. RIP THE ENTIRE AREA TO 6 INCHES DEPTH.
3. REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
4. APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE BELOW*).
5. CONTINUE TILLAGE UNTIL A WELL - PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.
6. SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
7. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
8. INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 60% DAMAGED REESTABLISHED FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
9. CONSULT CONSERVATION INSPECTOR ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

* APPLY LIMING—APPLY LIME ACCORDING TO SOIL TEST RECOMMENDATIONS. IF THE PH ACIDITY) OF THE SOIL IS NOT KNOWN, AN APPLICATION OF GROUND AGRICULTURAL LIMESTONE AT THE RATE OF 1 TO 1 1/2 TONS/ACRE ON COARSE-TEXTURED SOILS AND 2-3 TONS/ACRE ON FINE TEXTURED SOILS IS USUALLY SUFFICIENT. APPLY LIMESTONE UNIFORMLY AND INCORPORATE INTO THE TOP 4-6 INCHES OF SOIL. SOILS WITH A PH OF 6 OR HIGHER NEED NOT BE LIMED.
FERTILIZER: 700-1000 LBS/ACRE (10-10-10)
MULCH: 2 TONS/ACRE (SMALL GRAIN STRAW)
ANCHOR: ASPHALT EMULSION AT 450 GAL./ACRE

GENERAL CONDITIONS

1) GROUND STABILIZATION

| SITE AREA DESCRIPTION | STABILIZATION TIME FRAME | STABILIZATION TIME FRAME EXCEPTIONS |
|---|---|---|
| PERIMETER DIKES, SWALES, DITCHES AND SLOPES | 7 DAYS | NONE |
| HIGH QUALITY WATER (HQW) ZONES | 7 DAYS | NONE |
| SLOPES STEEPER THAN 3:1 | 7 DAYS | IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED. |
| SLOPES 3:1 OR FLATTER | 14 DAYS | 7-DAYS FOR SLOPES GREATER THAN 50 FEET IN LENGTH |
| ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1 | 14 DAYS | NONE (EXCEPT FOR PERIMETERS AND HQW ZONES) |

2) INSPECTIONS
-WEEKLY INSPECTION REQUIREMENTS.
-RAIN GAUGE AND INSPECTIONS AFTER 1" RAIN EVENTS.
-INSPECTIONS ARE ONLY REQUIRED DURING "NORMAL BUSINESS HOURS".
-INSPECTION REPORTS MUST BE AVAILABLE ON-SITE DURING BUSINESS HOURS UNLESS A SITE SPECIFIC EXEMPTION IS APPROVED.
-RECORDS MUST BE KEPT FOR 3 YEARS AND AVAILABLE UPON REQUEST.
-ELECTRONICALLY AVAILABLE RECORDS MAY BE SUBMITTED UNDER CERTAIN CONDITIONS.

3) CONDITIONS IN EROSION & SEDIMENTATION CONTROL PLANS"
-DESIGNATION ON THE PLANS WHERE THE 7 AND 14 DAY GROUND STABILIZATION REQUIREMENTS OF THE NPDES PERMIT APPLY.
-ALL BASINS WITH GREATER THAN 1 ACRE DRAINAGE AREA MUST BE DESIGNED SUCH THAT THE SURFACE WITHDRAWAL REQUIREMENTS OF THE NPDES PERMIT IS INCLUDED.

4) SEDIMENT BASINS
-OUTLET STRUCTURES MUST WITHDRAW FROM BASIN SURFACE UNLESS DRAINAGE AREA IS LESS THAN 1 ACRE.
-USE ONLY DWQ-APPROVED FLOCCULANTS.

## PERMANENT SEEDING SCHEDULE

| DATE | TYPE | BROADCAST SEEDING RATES |
|---|---|---|
| OCT 1 - APR 1 | SPLITBEARD BLUESTEM | 15 LBS/ACRE |
| AUG 30 - MAR 15 | BIG BLUESTEM | 200-250 LBS/ACRE |
| AUG 15 - APR 15 | RYE GRAIN | 40 LBS/ACRE |
| APR 15- AUG 15 | GERMAN MILLET | 10 LBS/ACRE |

## TEMPORARY SEEDING SCHEDULE

| DATE | TYPE | PLANTING RATE |
|---|---|---|
| DEC 1 - APR 15 | SWITCHGRASS | 50 LBS/ACRE |
| APR. 15 - AUG 15 | GERMAN MILLET | 40 LBS/ACRE |
| AUG 15 - DEC 30 | RYE GRAIN | 120 LBS/ACRE |

ISSUED FOR CONSTRUCTION

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ERWIN, HARNETT COUNTY, NCDEQ, AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS


NORTH CAROLINA PROFESSIONAL SEAL 048231 ENGINEER JACOB C. DOOLEY
06/09/2026

THIS DRAWING PREPARED AT THE
**RALEIGH OFFICE**
5410 Trinity Road, Suite 102 | Raleigh, NC 27607
TEL 919.866.4951 FAX 919.833.8124 www.timmons.com


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| DATE | REVISION DESCRIPTION |
|---|---|
| 03/02/2026 | NCDOT ROADWAY EXHIBIT SUBMITTAL #1 |
| 03/20/2026 | NCDEQ, NCDOT, TOWN OF ERWIN, HRVI RESUBMITTALS |
| 04/29/2026 | HRVI RESUBMITTAL |
| 05/20/2026 | HRVI SUBMITTAL #3 |
| 06/09/2026 | HRVI SUBMITTAL #4 |

DATE
12/17/2025

DRAWN BY
332

DESIGNED BY
J. DOOLEY

CHECKED BY
J. DOOLEY

SCALE
AS SHOWN

# TIMMONS GROUP

CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC

NORTH CAROLINA LICENSE NO. C-1652

TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA

NOTES AND DETAILS

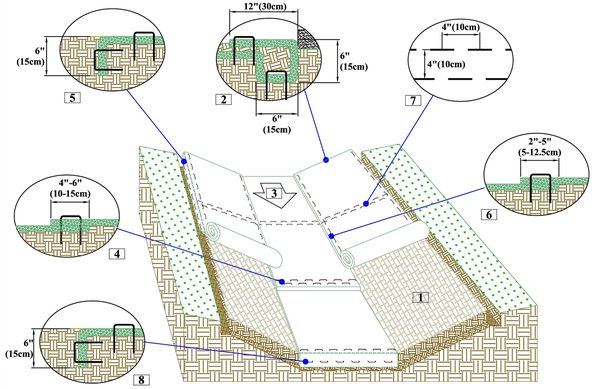
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# CHANNEL INSTALLATION DETAIL




1. Prepare soil before installing rolled erosion control products (RECPs), including any necessary application of lime, fertilizer, and seed.
2. Begin at the top of the channel by anchoring the RECPs in a 6"(15cm) deep X 6"(15cm) wide trench with approximately 12"(30cm) of RECPs extended beyond the up-slope portion of the trench. Use ShoreMax mat at the channel/culvert outlet as supplemental scour protection as needed. Anchor the RECPs with a row of staples/stakes approximately 12"(30cm) apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to the compacted soil and fold the remaining 12"(30cm) portion of RECPs back over the seed and compacted soil. Secure RECPs over compacted soil with a row of staples/stakes spaced approximately 12" apart across the width of the RECPs.
3. Roll center RECPs in direction of water flow in bottom of channel. RECPs will unroll with appropriate side against the soil surface. All RECPs must be securely fastened to soil surface by placing staples/stakes in appropriate locations as shown in the staple pattern guide.
4. Place consecutive RECPs end-over-end (Shingle style) with a 4"-6" overlap. Use a double row of staples staggered 4" apart and 4" on center to secure RECPs.
5. Full length edge of RECPs at top of side slopes must be anchored with a row of staples/stakes approximately 12"(30cm) apart in a 6"(15cm) deep X 6"(15cm) wide trench. Backfill and compact the trench after stapling.
6. Adjacent RECPs must be overlapped approximately 2"-5" (5-12.5cm) (Depending on RECPs type) and stapled.
7. In high flow channel applications a staple check slot is recommended at 30 to 40 foot (9 -12m) intervals. Use a double row of staples staggered 4"(10cm) apart and 4"(10cm) on center over entire width of the channel.
8. The terminal end of the RECPs must be anchored with a row of staples/stakes approximately 12" (30cm) apart in a 6"(15cm) deep X 6"(15cm) wide trench. Backfill and compact the trench after stapling.

**CRITICAL POINTS**
A. Overlaps and Seams
B. Projected Water Line
C. Channel Bottom/Side Slope Vertices




**NOTES:**
*Horizontal staple spacing should be altered if necessary to allow staples to secure the critical points along the channel surface.

**In loose soil conditions, the use of staple or stake lengths greater than 6"(15cm) may be necessary to properly secure the RECPs.

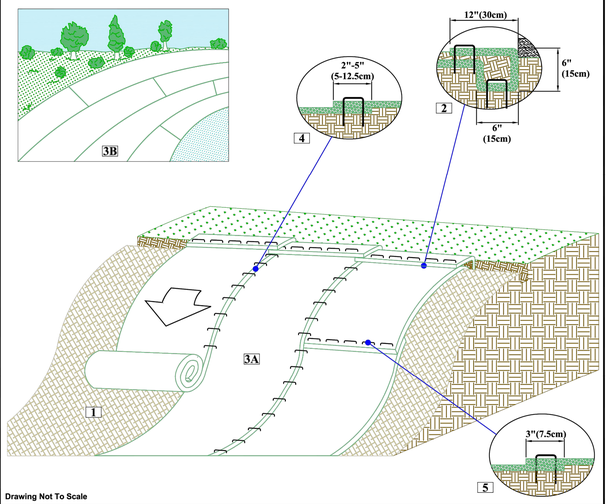
Drawing Not To Scale

NORTH AMERICAN GREEN
5401 St. Wendel - Cynthiana Rd.
Poseyville, IN 47633
PH: 800-722-2040
www.nagreen.com

**Disclaimer:**
The information presented herein is general design information only. For specific applications, consult an independent professional for further design guidance.

Drawn on: 5-4-17

# SLOPE INSTALLATION DETAIL




1. Prepare soil before installing rolled erosion control products (RECPs), including any necessary application of lime, fertilizer, and seed.
2. Begin at the top of the slope by anchoring the RECPs in a 6"(15cm) deep X 6"(15cm) wide trench with approximately 12" (30cm) of RECPs extended beyond the up-slope portion of the trench. Anchor the RECPs with a row of staples/stakes approximately 12" (30cm) apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to the compacted soil and fold the remaining 12"(30cm) portion of RECPs back over the seed and compacted soil. Secure RECPs over compacted soil with a row of staples/stakes approximately 12"(30cm) apart across the width of the RECPs.
3. Roll the RECPs (A) down or (B) horizontally across the slope. RECPs will unroll with appropriate side against the soil surface. All RECPs must be securely fastened to soil surface by placing staples/stakes in appropriate locations as shown in the staple pattern guide.
4. The edges of parallel RECPs must be stapled with approximately 2" - 5" (5-12.5cm) overlap depending on the RECPs type.
5. Consecutive RECPs spliced down the slope must be end over end (Shingle style) with an approximate 3"(7.5cm) overlap. Staple through overlapped area, approximately 12"(30cm) apart across entire RECPs width.

*NOTE:
In loose soil conditions, the use of staple or stake lengths greater than 6"(15cm) may be necessary to properly secure the RECP's.

Drawing Not To Scale

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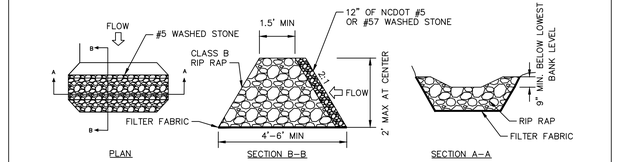
Drawn on: 5-4-17

**Table 6.62b Specifications For Sediment Fence Fabric**

**Temporary Silt Fence Material Property Requirements**

| | Test Material | Units | Supported[1] Silt Fence | Un-Supported[1] Silt Fence | Type of Value |
|---|---|---|---|---|---|
| Grab Strength | ASTM D 4632 | N (lbs) | | | |
| Machine Direction | | | 400 | 550 | MARV |
| | | | (90) | (90) | |
| X-Machine Direction | | | 400 | 450 | MARV |
| | | | (90) | (90) | |
| Permittivity[2] | ASTM D 4491 | sec-1 | 0.05 | 0.05 | MARV |
| Apparent Opening Size[2] | ASTM D 4751 | mm | 0.60 | 0.60 | Max. ARV[3] |
| | | (US Sieve #) | (30) | (30) | |
| Ultraviolet Stability | ASTM D 4355 | % Retained Strength | 70% after 500h of exposure | 70% after 500h of exposure | Typical |

[1] Silt Fence support shall consist of 14 gage steel wire with a mesh spacing of 150 mm (6 inches), or prefabricated poylmer mesh of equivalent strength.
[2] These default values are based on empirical evidence with a variety of sediment. For environmentally sensitive areas, a review of previous experience and/or site or regionally specific geotextile tests in accordance with Test Method D 5141 should be performed by the agency to confirm suitability of these requirements.
[3] As measured in accordance with Test Method D 4632.



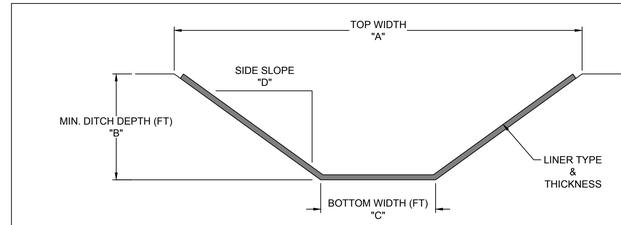

CONSTRUCTION SPECIFICATIONS:

1. PLACE STONE TO THE LINES AND DIMENSIONS SHOWN IN THE PLAN ON A FILTER FABRIC FOUNDATION.
2. KEEP THE CENTER STONE SECTION AT LEAST 1 FOOT BELOW NATURAL GROUND LEVEL WHERE THE DAM ABUTS THE CHANNEL BANKS.
3. EXTEND STONE AT LEAST 1.5 FEET BEYOND BEYOND THE DITCH BANK TO KEEP WATER FROM CUTTING AROUND THE ENDS OF THE CHECK DAM.
4. SET SPACING BETWEEN DAMS TO ASSURE THAT THE ELEVATION AT THE TOP OF THE LOWER DAM IS THE SAME AS THE TOE ELEVATION OF THE UPPER DAM, EVERY 2' IN ELEVATION CHANGE.
5. PROTECT THE CHANNEL AFTER THE LOWEST CHECK DAM FROM HEAVY FLOW THAT COULD CAUSE EROSION.
6. MAKE SURE THAT THE CHANNEL REACH ABOVE THE MOST UPSTREAM DAM IS STABLE.
7. ENSURE THAT OTHER AREAS OF THE CHANNEL, SUCH AS CULVERT ENTRANCES BELOW THE CHECK DAMS, ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONES.

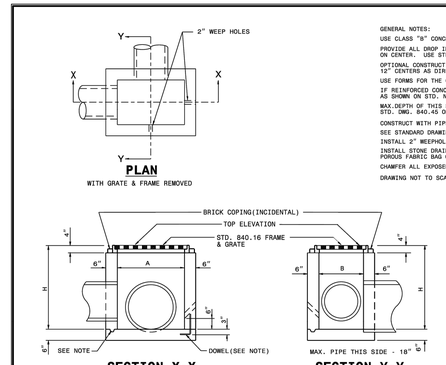
MAINTENANCE NOTES:

1. INSPECT CHECK DAMS AND CHANNELS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. CLEAN OUT SEDIMENT, STRAW, LIMBS, OR OTHER DEBRIS THAT COULD CLOG THE CHANNEL WHEN NEEDED.
2. ANTICIPATE SUBMERGENCE AND DEPOSITION ABOVE THE CHECK DAM AND EROSION FROM HIGH FLOWS AROUND THE EDGES OF THE DAM. CORRECT ALL DAMAGE IMMEDIATELY. IF SIGNIFICANT EROSION OCCURS BETWEEN DAMS, ADDITIONAL MEASURES CAN BE TAKEN SUCH AS, INSTALLING A PROTECTIVE RIPRAP LINER IN THAT PORTION OF THE CHANNEL.
3. REMOVE SEDIMENT ACCUMULATED BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION, ALLOW THE CHANNEL TO DRAIN THROUGH THE STONE CHECK DAM, AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE DAM. ADD STONES TO DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.

## ROCK CHECK DAM
## N.T.S



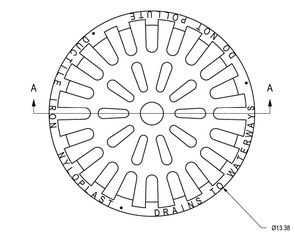

MAINTENANCE FOR CHANNEL LINING/DITCH SECTION
DURING THE ESTABLISHMENT PERIOD, CHECK BLANKET-LINED CHANNELS AFTER EVERY RAINFALL. AFTER GRASS IS ESTABLISHED, PERIODICALLY CHECK THE CHANNEL; CHECK IT AFTER EVERY HEAVY RAINFALL EVENT. IMMEDIATELY MAKE REPAIRS. IT IS PARTICULARLY IMPORTANT TO CHECK THE CHANNEL OUTLET AND ALL ROAD/TRAIL CROSSINGS FOR BANK STABILITY AND EVIDENCE OF PIPING OR SCOUR HOLES. REMOVE ALL SIGNIFICANT SEDIMENT ACCUMULATIONS TO MAINTAIN THE DESIGNED CARRYING CAPACITY. KEEP THE GRASS IN A HEALTHY, VIGOROUS CONDITION AT ALL TIMES, SINCE IT IS THE PRIMARY EROSION PROTECTION FOR THE CHANNEL.

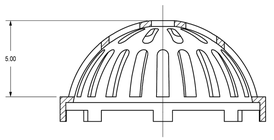



GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE ALL DROP INLETS OVER 3'-8" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR 2" KEYWAY OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
MAX.DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12'-0". STD. DWG. 840.45 OR 840.46 CONTROLS MAXIMUM DEPTH IF PRECAST BOX IS USED.
CONSTRUCT WITH PIPE CROWNS MATCHING.
SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.
INSTALL 2" WEEPHOLES AS DIRECTED BY THE ENGINEER.
INSTALL STONE DRAINS, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 78M STONE IN A POROUS FABRIC BAG OR WRAP, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.

| DIMENSIONS AND QUANTITIES FOR DROP INLET(BASED ON MIN. HEIGHT, H) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| DIMENSIONS OF BOX & PIPE | | | | CUBIC YARDS CONC. IN BOX | | | DEDUCTIONS FOR ONE PIPE | |
| PIPE | SPAN | WIDTH | MIN. HEIGHT | BOTTOM SLAB | WALL PER FT. HT. | TOTAL CONCRETE FOR MINIMUM HEIGHT | C.M. | R.C. |
| D | A | B | H | | | | | |
| 12" | 3'-0" | 2'-0" | 2'-0" | 0.222 | 0.222 | 0.592 | 0.015 | 0.026 |
| 15" | / | / | 2'-3" | / | / | 0.648 | 0.023 | 0.036 |
| 18" | / | / | 2'-6" | / | / | 0.703 | 0.033 | 0.049 |
| 24" | / | / | 3'-0" | / | / | 0.814 | 0.059 | 0.085 |
| 30" | 3'-0" | 2'-0" | 3'-6" | 0.222 | 0.222 | 0.925 | 0.092 | 0.127 |

1299CGD
APPROX. DRAIN AREA = 82.87 SQ IN
APPROX. WEIGHT = 18.50 LBS




DIMENSIONS ARE FOR REFERENCE ONLY
ACTUAL DIMENSIONS MAY VARY
DIMENSIONS ARE IN INCHES
QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT
LOCKING DEVICE AVAILABLE UPON REQUEST

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| | | | |
|---|---|---|---|
| DRAWN BY | EBC | MATERIAL | DUCTILE IRON |
| DATE | 03-06-06 | | |
| REVISED BY | CCA | PROJECT NO./NAME | |
| DATE | 08-30-13 | | |
| DWG SIZE | A | SCALE 1:4 | SHEET 1 OF 1 |

ADS Nyloplast
3130 VERONA AVE
BUFORD, GA 30518
PHN (770) 932-2443
FAX (770) 932-2490
www.nyloplast-us.com

TITLE: 12 IN DOME GRATE
DWG NO. 7001-110-206 REV E

ISSUED FOR CONSTRUCTION

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ERWIN, HARNETT COUNTY, NCDEQ, AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1:24

ROADWAY STANDARD DRAWING FOR
**CONCRETE DROP INLET**
12" THRU 30" PIPE

SHEET 1 OF 1
**840.14**

NORTH CAROLINA PROFESSIONAL SEAL 048231 ENGINEER JACOB C. DOOLEY
06/09/2026

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|---|---|
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| NCDEQ, NCDOT, TOWN OF ERWIN, HRVI RESUBMITTALS | 03/20/2026 |
| HRVI RESUBMITTAL | 04/29/2026 |
| HRVI SUBMITTAL | 05/20/2026 |
| HRVI SUBMITTAL #4 | 06/09/2026 |

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SCALE AS SHOWN

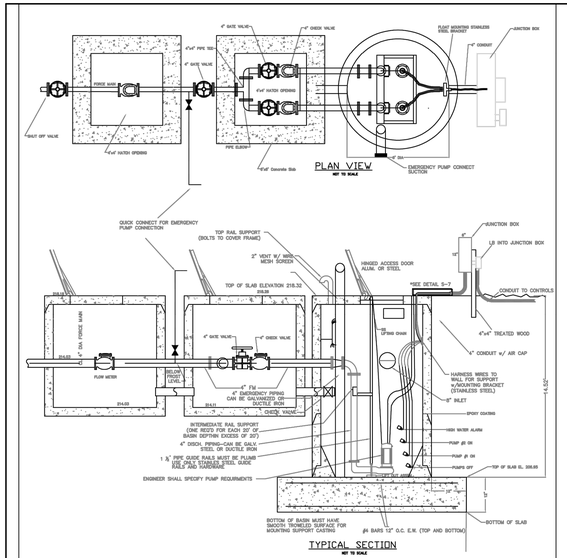
**TIMMONS GROUP**
NORTH CAROLINA LICENSE NO. C-1652

CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC
TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA
NOTES AND DETAILS

JOB NO. 37630.232
SHEET NO. C7.6

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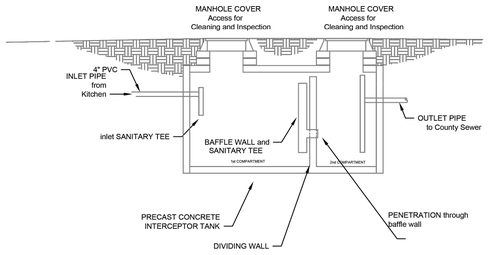
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GENERAL NOTES

1. ALL FIELD WIRING CONNECTIONS BETWEEN PUMPS, FLOAT SWITCHES AND CONTROL PANEL BY LISCENSED ELECTRICIAN.
2. ALL ENCLOSURES SHALL BE NEMA 4X STAINLESS STEEL.
3. PVC END CAP GLUED TO ELBOW AND PERFORATED WITH 16 EA. 0.12" DIA. HOLES MAY BE USED IN LIEU OF THE BUG SCREEN.
4. RUN FLOAT SWITCH WIRES TO TERMINAL STRIP ON JUNCTION BOX AND FROM JUNCTION BOX TO CONTROL PANEL.
5. INSTALL AN INTER LOCKED RECEPTACLE WITH ENCLOSED DISCONNECT FOR TRANSFERRING LINE POWER TO PERMANENT GENERATOR IN THE EVENT OF A POWER FAILURE.
6. WIRE AND CONDUIT SIZE MAY VARY DEPENDING UPON PUMP REQUIREMENTS.
7. PUMP STATION BASE TO BE MANUFACTURED SPECIFICALLY FOR DIRECT MOUNTING TO OPEN TOP, 5' DIA. MANHOLE AND SHALL BE PROVIDED WITH ALL MOUNTING HARDWARE AND ANCHOR BOLT. ANCHOR BOLTS SHALL BE HARDENED ALLOY,
8. CIRCUITS SHALL BE IN DIRECT BURIED RIGID STEEL CONDUIT A MINIMUM OF 18" BELOW FINISHED GRADE.
9. ALL HARDWARE INSIDE WETWELL SHALL BE STAINLESS STEEL.
10. ENGINEER MUST PROVIDE ELEVATIONS FOR BASE, FLOATS, AND TOP.

TYPICAL BELOW GROUND PUMPS SEWER LIFT STATION DETAIL — S 2
NO SCALE



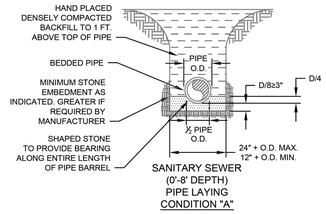

NOTES:
1. ALL PVC PIPING SHALL BE SCHEDULE 40 AND MINIMUM SIZE OF FOUR (4") INCHES DIAMETER.
2. GREASE TRAPS/INTERCEPTORS INSTALLED IN PAVED AND HIGH TRAFFIC AREAS SHALL MEET H-20 RATING FOR THE LOADING REQUIREMENTS.
3. HARNETT COUNTY DEPARTMENT OF PUBLIC UTILITIES SHALL BE RESPONSIBLE FOR PIPE WORK AND MAIN LINE TAPS IN RIGHT OF WAY UP TO THE THE SEWER CLEAN OUT FOR EACH SERVICE.
4. EACH GREASE TRAP/INTERCEPTOR SHALL BE DESIGNED FOR A MINIMUM OF AT LEAST 1,000 GALLLONS UNLESS OTHERWISE APPROVED BY HCDPU.

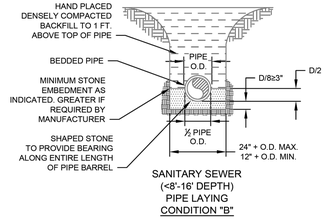
TYPICAL GREASE TRAP INTERCEPTOR DETAIL — S 12
NO SCALE

GENERAL NOTES:

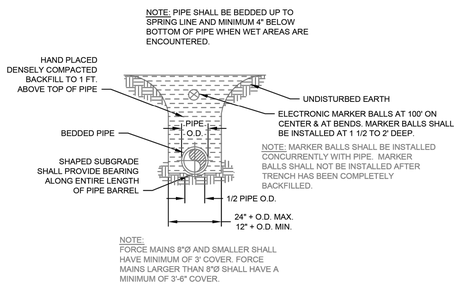
1. ALL FIELD WIRING CONNECTIONS BETWEEN PUMPS, FLOAT SWITCHES AND CONTROL PANEL SHALL BE MADE BY LICENSED ELECTRICIAN ELECTRICIAN.
2. P.V.C. END CAP GLUED TO ELBOW AND PERFORATED WITH 16 EA. 0.12" DIA. HOLES MAY BE USED IN LIEU OF THE BIRD SCREEN.
3. RUN FLOAT SWITCH WIRES TO TERMINAL STRIP IN JUNCTION BOX FROM WETWELL AND FROM JUNCTION BOX TO CONTROL PANEL.
4. ALL ENCLOSURES SHALL BE NEMA 4X STAINLESS STEEL.
5. WIRE SIZE AND CONDUIT SIZE MAY VARY DEPENDING UPON PUMP REQUIREMENTS BUT 1" CONDUIT SHALL BE MIN SIZE.
6. PUMP STATION BASE TO BE MANFACTURED SPECIFICALLY FOR DIRECT MOUNTING TO OPEN TOP, 6' DIA. MANHOLE AND SHALL BE PROVIDED WITH ALL MOUNTING HARDWARE AND ANCHOR BOLTS. ANCHOR BOLTS SHALL BE HARDENED ALLOY, 5/8" DIA.
7. CIRCUITS SHALL BE IN DIRECT BURIED RIGID STEEL CONDUIT A MINIMUM OF 18" BELOW FINISHED GRADE.
8. COORDINATE GENERATOR RECEPTACLE WITH OWNER.

GENERAL NOTES — S 15

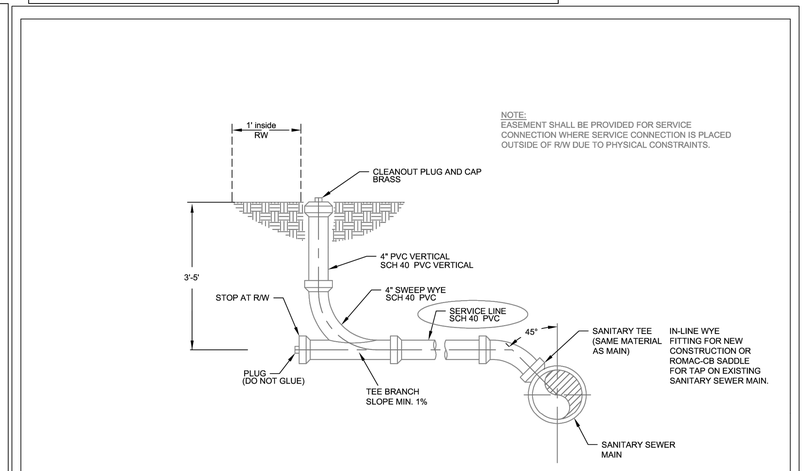



TYPICAL PIPE LAYING CONDITION DETAIL — S 16
NO SCALE




TYPICAL PIPE LAYING CONDITION DETAILS — S 18
NO SCALE




TYPICAL SEWER SERVICE CONNECTION DETAIL — S 29
NO SCALE

ISSUED FOR CONSTRUCTION

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ERWIN, HARNETT COUNTY, NCDEQ, AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 048231 ENGINEER JACOB C. DOOLEY
06/09/2026

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| 03/20/2026 | NCDEQ, NCDOT, TOWN OF ERWIN, HRVI RESUBMITTALS |
| 04/29/2026 | HRVI RESUBMITTAL |
| 05/20/2026 | NCDOT SUBMITTAL |
| 06/09/2026 | HRVI SUBMITTAL #4 |

DATE 12/17/2025
DRAWN BY 332
DESIGNED BY J. DOOLEY
CHECKED BY J. DOOLEY
SCALE AS SHOWN

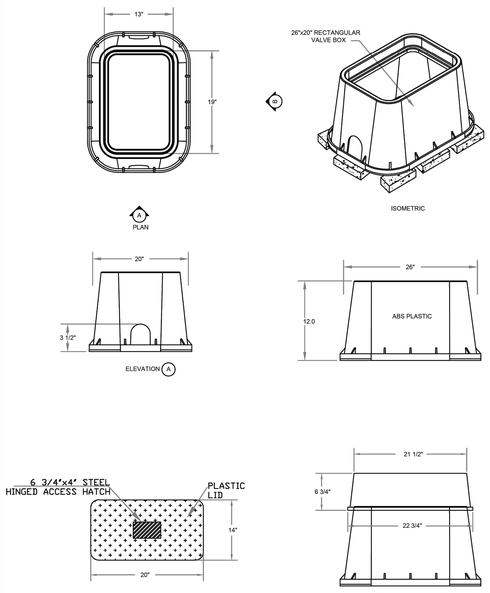
TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC
TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA
NOTES AND DETAILS

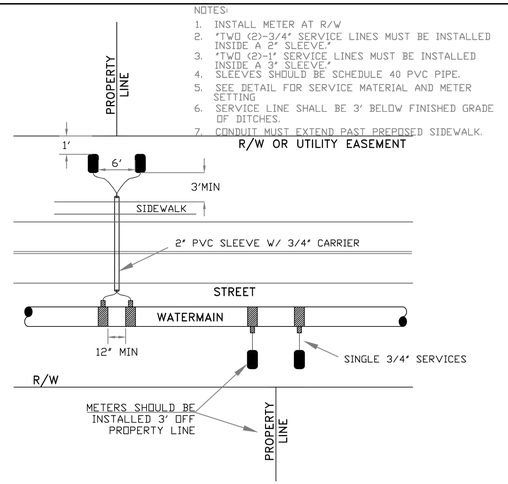
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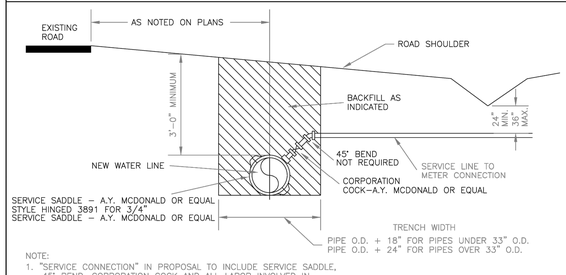
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TYPICAL METER BOX DETAIL FOR 1" SERVICE W 17
NO SCALE

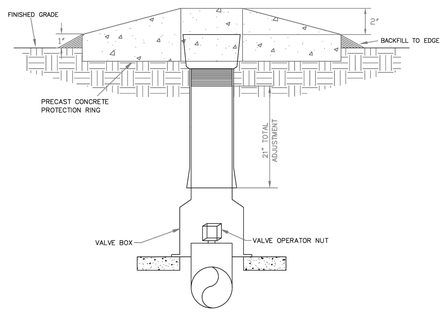



TYPICAL DOMESTIC WATER SERVICE INSTALLATION DETAIL W 12
NO SCALE

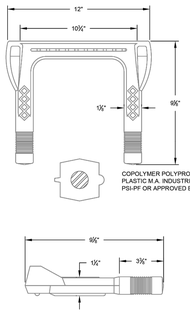



NOTE:
1. "SERVICE CONNECTION" IN PROPOSAL TO INCLUDE SERVICE SADDLE, 45° BEND, CORPORATION COCK AND ALL LABOR INVOLVED IN MAKING A COMPLETE SERVICE CONNECTION.
2. SERVICE PIPING TO BE 3/4" SDR-9 PE TUBING
3. ALL BRASS FITTINGS SHALL BE COMPRESSION TYPE

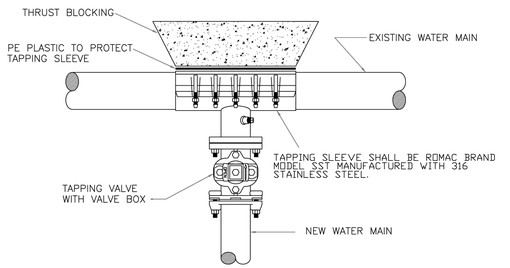
TYPICAL WATER SERVICE CONNECTION USING TAPPING SADDLE DETAIL W 13
NO SCALE




TYPICAL VALVE BOX DETAIL W 2
NO SCALE




TYPICAL POLYPROPYLENE PLASTIC STEP DETAIL S 27
NO SCALE

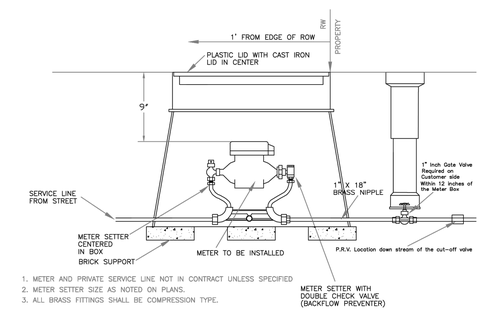



TYPICAL TAPPING SLEEVE AND VALVE ASSEMBLY DETAIL W 5
NO SCALE

| LAYING CONDITIONS | DESCRIPTION | PROJECT USE |
|---|---|---|
| TYPE 1 | FLAT BOTTOM UNDISTURBED EARTH TRENCH, LOOSE BACKFILL | NOT USED. |
| TYPE 2 | FLAT BOTTOMED UNDISTURBED EARTH TRENCH. BACKFILL LIGHTLY CONSOLIDATED TO CENTERLINE OF PIPE. | NOT USED. |
| TYPE 3 | PIPE BEDDED IN 4" MININUM JOB EXCAVATED MATERIAL. BACKFILL LIGHTLY CONSOLIDATED TO TOP OF PIPE. | ALL DUCTILE IRON GRAVITY SEWER LINE. |
| TYPE 4 | PIPE BEDDED IN SAND, GRANULAR MATERIAL OR GRADED GRAVEL TO THE DEPTH OF 1/8 PIPE DIAMETER, 4" MIN. JOB EXCAVATED MATERIAL COMPACTED TO 4" ABOVE TOP OF PIPE. (APPROX. 95% STANDARD PROCTOR, AASHTO T-99) | ALL PVC WATER LINE AND PVC FORCE MAIN. |
| TYPE 5 | PIPE BEDDED TO ITS CENTERLINE IN COMPACTED GRANULAR MATERIAL 4" MIN. UNDER PIPE. COMPACTED GRANULAR OR SAND MATERIAL TO 4"ABOVE TOP OF PIPE. (APPROX. 95% STANDARD PROCTOR, AASHTO T-99) | ALL PVC GRAVITY SEWER LINE. |

**GRAVITY SEWER**
**35 PIPE FULLY ENCOMPASSED IN 57 STONE**
**4" UNDER TO 4" ABOVE TOP OF PIPE**
**26 PIPE GRAVEL 4" BELOW TO TOP OF PIPE**

TYPICAL LAYING CONDITIONS DETAIL S 33
NO SCALE




1. METER AND PRIVATE SERVICE LINE NOT IN CONTRACT UNLESS SPECIFIED
2. METER SETTER SIZE AS NOTED ON PLANS.
3. ALL BRASS FITTINGS SHALL BE COMPRESSION TYPE.

TYPICAL 1" METER SETTER INSTALLATION DETAIL W 16
NO SCALE

ISSUED FOR CONSTRUCTION

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ERWIN, HARNETT COUNTY, NCDEQ, AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS


NORTH CAROLINA PROFESSIONAL SEAL 048231 ENGINEER JACOB C. DOOLEY
06/09/2026

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| NCDEQ, NCDOT, TOWN OF ERWIN, HRVI RESUBMITTALS | 03/20/2026 |
| HRVI RESUBMITTAL | 04/29/2026 |
| HRVI SUBMITTAL | 05/29/2026 |
| HRVI SUBMITTAL #4 | 06/09/2026 |

DATE 12/17/2025
DRAWN BY 332
DESIGNED BY J. DOOLEY
CHECKED BY J. DOOLEY
SCALE AS SHOWN

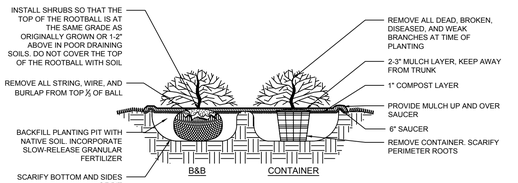
TIMMONS GROUP
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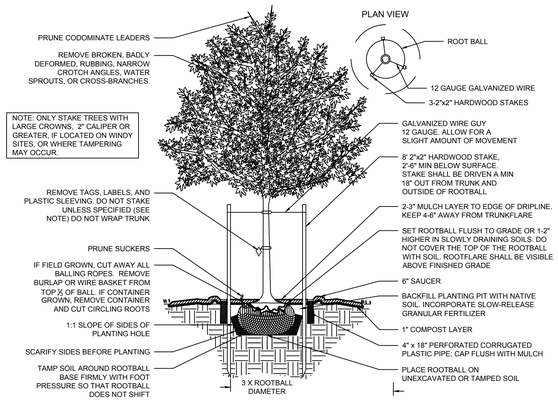
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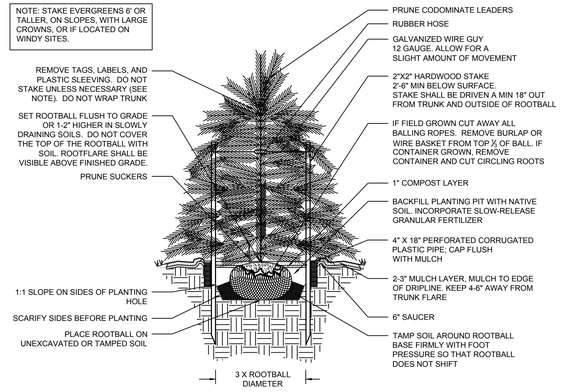

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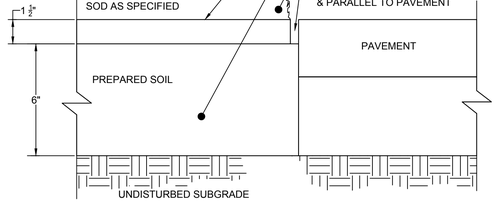

1 **SHRUB DETAIL**
NOT TO SCALE



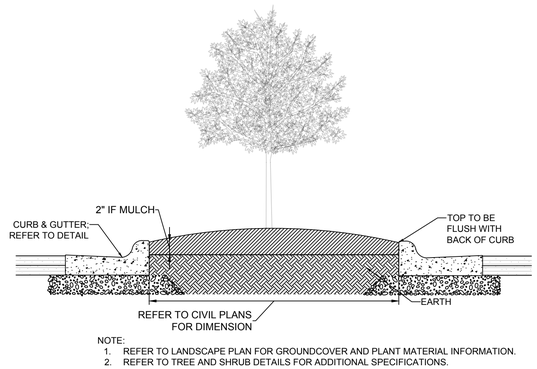

2 **DECIDUOUS TREE - STAKING SPECIFIED**
NOT TO SCALE




3 **EVERGREEN TREE - STAKING SPECIFIED**
NOT TO SCALE




5 **SOD DETAIL**
NOT TO SCALE




NOTE:
1. REFER TO LANDSCAPE PLAN FOR GROUNDCOVER AND PLANT MATERIAL INFORMATION.
2. REFER TO TREE AND SHRUB DETAILS FOR ADDITIONAL SPECIFICATIONS.

6 **LANDSCAPE ISLAND DETAIL**
NOT TO SCALE

ISSUED FOR CONSTRUCTION

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NORTH CAROLINA PROFESSIONAL SEAL 048231 ENGINEER JACOB C. DOOLEY
06/09/2026

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| NCDOT SUBMITTAL | 05/20/2026 |
| HRVV SUBMITTAL #4 | 06/09/2026 |

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DRAWN BY: 332
DESIGNED BY: J. DOOLEY
CHECKED BY: J. DOOLEY
SCALE: AS SHOWN

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

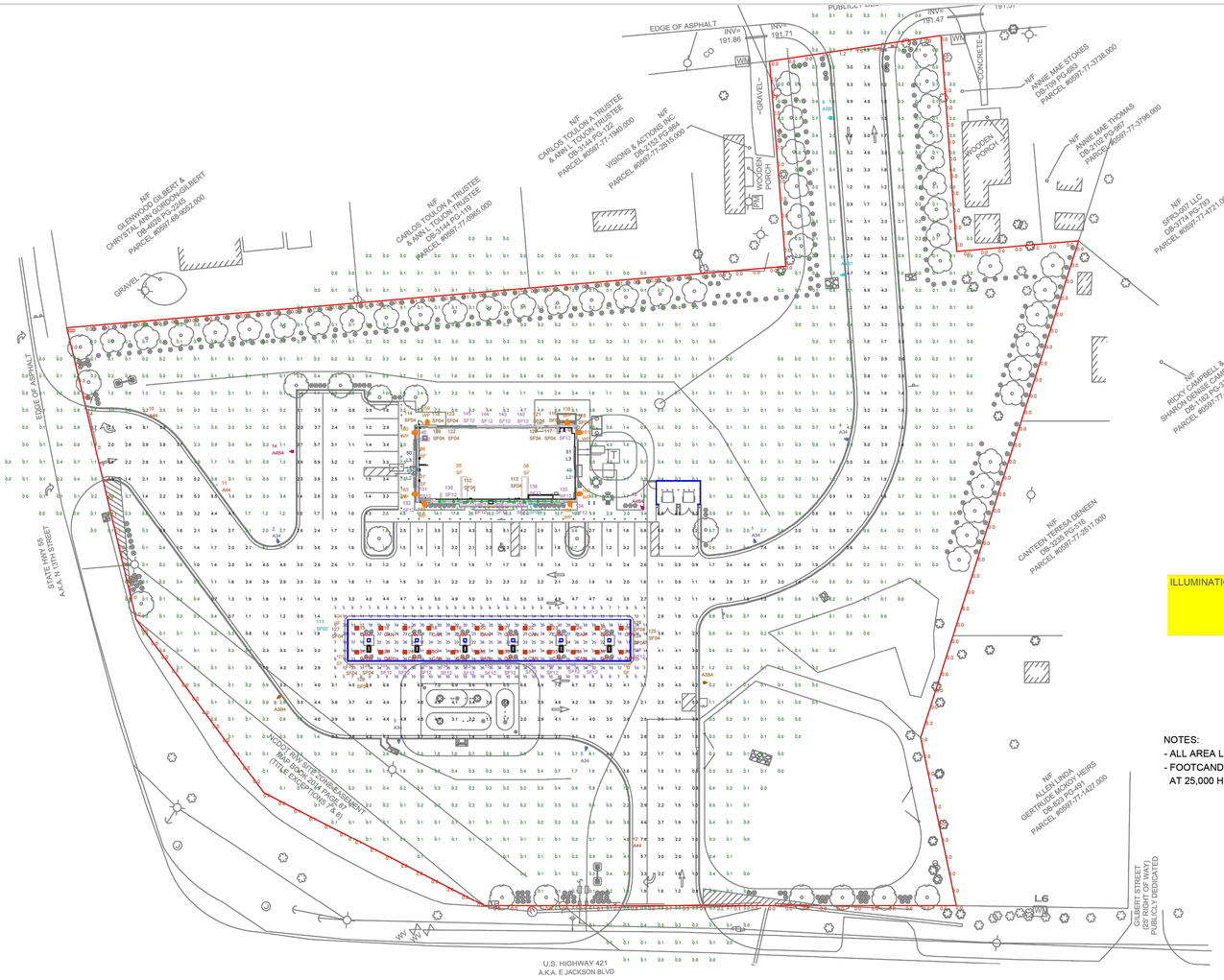
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| LUMINAIRE LOCATION SUMMARY | | |
|---|---|---|
| LUM NO. | LABEL | MTG. HT. |
| 1-5 | A34 | 16 |
| 6-7 | A3B4 | 16 |
| 8-9 | A3B7 | 16 |
| 10-12 | A44 | 16 |
| 13-14 | A4B4 | 16 |
| 15-38 | CAN | 15.5 |
| 39-47 | L1 | 12 |
| 48-49 | L2 | 12.463 |
| 50-51 | L3 | 12.463 |
| 52-55 | SF | 19.672 |
| 56-59 | SF | 21.699 |
| 60-73 | SF | 19.672 |
| 74-76 | SF | 18.199 |
| 77-100 | SF | 19.672 |
| 101-109 | SF | 18.5 |
| 110 | SF02 | 21.699 |
| 111 | SF02 | 18.5 |
| 112-113 | SF04 | 21.699 |
| 114-119 | SF04 | 19.672 |
| 120-123 | SF04 | 18.199 |
| 124-130 | SF04 | 18.5 |
| 131-134 | SF12 | 19.672 |
| 135-139 | SF12 | 21.699 |
| 140-141 | SF12 | 19.672 |
| 142-145 | SF12 | 18.199 |
| 146-157 | SF12 | 18.5 |
| 158-165 | WP | 14.5 |

ILLUMINATION LEVELS ARE THE RESULT OF CONDITIONS OR REQUESTS BY OTHERS
RED LEONARD ASSOCIATES IS NOT RESPONSIBLE
FOR INCIDENTS CAUSED BY INSUFFICIENT LIGHTING
AND DOES NOT RECOMMEND THESE LEVELS FOR
SECURITY AND SAFETY REASONS

THIS SITE IS LOCATED IN A REGION WHERE LIGHTING
IS REGULATED BY LOCAL ORDINANCES

NOTES:
- ALL AREA LIGHTS ON NEW 13 FT. POLE MOUNTED ON 3 FT. CONCRETE BASE
- FOOTCANDLE LEVELS CALCULATED AT GRADE USING MAINTAINED LUMEN VALUES AT 25,000 HOURS UNLESS NOTED OTHERWISE.

| CALCULATION SUMMARY | | | | | |
|---|---|---|---|---|---|
| LABEL | AVG | MAX | MIN | AVG/MIN | MAX/MIN |
| CANOPY | 17.73 | 36 | 3 | 5.91 | 12.00 |
| PAVED AREA | 2.86 | 8.5 | 0.6 | 4.77 | 14.17 |
| PROPERTY LINE | 0.10 | 1.7 | 0.0 | N.A. | N.A. |
| UNDEFINED | 0.90 | 26.3 | 0.0 | N.A. | N.A. |

| LUMINAIRE SCHEDULE | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SYMBOL | QTY | LABEL | ARRANGEMENT | LUMENS | LLF | DIMMING LUMEN MULTIPLIER | BUG RATING | WATTS/LUMINAIRE | TOTAL WATTS | MANUFACTURER | CATALOG LOGIC |
| | 5 | A34 | Single | 17202 | 0.959 | 0.620 | B3-U0-G3 | 61.5978 | 307.989 | Lithonia Lighting | RSX2 LED P2 50K R3 MVOLT SPA FAO (SETTING 4) |
| | 2 | A3B4 | Single | 12072 | 0.959 | 0.620 | B1-U0-G2 | 61.5978 | 123.196 | Lithonia Lighting | RSX2 LED P2 50K R3 MVOLT SPA HS FAO (SETTING 4) |
| | 2 | A3B7 | Single | 12072 | 0.959 | 0.950 | B1-U0-G2 | 106.0851 | 212.17 | Lithonia Lighting | RSX2 LED P2 50K R3 MVOLT SPA HS FAO (SETTING 7) |
| | 3 | A44 | Single | 17427 | 0.959 | 0.620 | B2-U0-G3 | 61.5978 | 184.793 | Lithonia Lighting | RSX2 LED P2 50K R4 MVOLT SPA FAO (SETTING 4) |
| | 2 | A4B4 | Single | 11453 | 0.959 | 0.620 | B1-U0-G2 | 61.5978 | 123.196 | Lithonia Lighting | RSX2 LED P2 50K R4 MVOLT SPA HS FAO (SETTING 4) |
| | 24 | CAN | Single | 6337 | 0.959 | 1.000 | B2-U0-G1 | 38.54 | 924.96 | Lithonia Lighting | PCNY LED ALO2 SWW2 (50K) FPCL MVOLT (SW. POS. 2) |
| | 9 | L1 | SINGLE | 2238 | 0.959 | 1.000 | N.A. | 25.15 | 226.35 | Lithonia Lighting | LBR6 ALO2 20LM SWW1 (4000K) AR LSS MWD 90CRI |
| | 2 | L2 | Single | 4570 | 1.000 | 1.000 | N.A. | 54.9 | 109.8 | P-LED | M-SX024-40 (15 FT) |
| | 2 | L3 | Single | 3656 | 1.000 | 1.000 | N.A. | 43.92 | 87.84 | P-LED | M-SX024-40 (12 FT) |
| | 58 | SF | Single | 110 | 1.000 | 1.000 | N.A. | 1.04 | 60.32 | P-LED | PL-OP2-PD324-P-NW |
| | 2 | SF02 | SF 2FT | 110 | 1.000 | 1.000 | N.A. | 1.04 | 16.64 | P-LED | PL-OP2-PD324-P-NW |
| | 19 | SF04 | SF 4FT | 110 | 1.000 | 1.000 | N.A. | 1.04 | 276.64 | P-LED | PL-OP2-PD324-P-NW |
| | 27 | SF12 | SF 12FT_1 | 110 | 1.000 | 1.000 | N.A. | 1.04 | 1235.52 | P-LED | PL-OP2-PD324-P-NW |
| | 8 | WP | SINGLE | 1587 | 0.959 | 1.000 | B0-U0-G1 | 10.6112 | 84.89 | Lithonia Lighting | ARC2 LED P1 40K MVOLT |


REDLEONARD ASSOCIATES
1340 Kemper Meadow Dr, Forest Park, OH 45240
513-574-9500 | redleonard.com


| REV. | BY | DATE | DESCRIPTION |
|---|---|---|---|
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| . | . | . | . |


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SCALE: 1" = 40'
LAYOUT BY: FNW
DWG SIZE: D
DATE: 1/7/2026

PROJECT NAME:
CIRCLE K
ERWIN, NC
DRAWING NUMBER:
RL-10910-S1

CIRCLE K

| | QTY | LABEL | DESCRIPTION |
|---|---|---|---|
| WALL MOUNTED | 8 | WP | ARC2 LED P1 40K MVOLT |



## ADDITIONAL FIXTURE INFO



# ARC2 LED

Architectural Wall Luminaire

Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

### Specifications

**Depth (D1):** 9.25"
**Depth (D2):** 7.5"
**Height:** 5"
**Width:** 14"
**Weight:** (without options) 11 lbs




### Introduction

The Lithonia Lighting ARC LED wall-mounted luminaires provide both architectural styling and visually comfortable illumination while providing the high energy savings and low initial costs for quick financial payback.

ARC2 delivers up to 6,500 lumens with a soft, non-pixelated light source, creating a visually comfortable environment. It offers integrated emergency battery backup options, including an IWV cold temperature option, making it suitable for pedestrian scale applications in any environment.

## ARC LED Family Overview

| Luminaire | Standard EM -0°F | Cold EM, -20°F | Approximate Lumens (4000K) | | | | |
|---|---|---|---|---|---|---|---|
| | | | P1 | P2 | P3 | P4 | P5 |
| ARC1 LED | 4W | -- | 1,500 | 2,000 | 3,000 | -- | -- |
| ARC2 LED | 4W | 8W | 1,500 | 2,000 | 3,000 | 4,000 | 6,500 |

## Ordering Information

**EXAMPLE:** ARC2 LED P2 40K MVOLT PE DDBXD

| Series | Package | Color Temperature | Voltage | Options | Finish |
|---|---|---|---|---|---|
| ARC2 LED | P1 1,500 Lumens<br>P2 2,000 Lumens<br>P3 3,000 Lumens<br>P4 4,000 Lumens<br>P5 6,500 Lumens | 30K 3000K<br>40K 4000K<br>50K 5000K | MVOLT 347[1] | E4WH Emergency battery backup, CEC compliant (4W, 0°C min)[1]<br>E8WC Emergency battery backup, CEC compliant (8W, -20°C min)[1]<br>PE Button type photocell for dusk-to-dawn operation<br>DMG 0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)[2]<br>SPDXKV 6kV surge protection[1]<br>FAO Field adjustable light output device. Allows for easy adjustment to the desired light levels, from 20% to 100%[2]<br>L25138 "W" fixture mods | DDBXD Dark bronze<br>DBLXD Black<br>DNAXD Natural aluminum<br>DWHXD White<br>DSSXD Sandstone<br>DDBTXD Textured dark bronze<br>DBLBXD Textured black<br>DNATXD Textured natural aluminum<br>DWHGXD Textured white<br>DSSTXD Textured sandstone |

### Accessories

Ordered and shipped separately.
W1BBW DDBXD U Surface-mounted back box (specify finish)

**NOTES**
1 347V not available with E4WH, E8WC and SPDXKV.
2 FAO not available with DMG.


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## Performance Data

### Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

| Performance Package | System Watts | 30K (3000K, 70CRI) | | | | | 40K (4000K, 70 CRI) | | | | | 50K (5000K, 70 CRI) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Lumens | LPW | B | U | G | Lumens | LPW | B | U | G | Lumens | LPW | B | U | G |
| P1 | 11W | 1,582 | 142 | 0 | 0 | 1 | 1,587 | 150 | 0 | 0 | 1 | 1,598 | 151 | 0 | 0 | 1 |
| P2 | 16W | 2,230 | 140 | 0 | 0 | 1 | 2,237 | 147 | 0 | 0 | 1 | 2,285 | 148 | 0 | 0 | 1 |
| P3 | 24W | 3,206 | 135 | 0 | 0 | 1 | 3,187 | 143 | 0 | 0 | 1 | 3,410 | 144 | 0 | 0 | 1 |
| P4 | 30W | 3,903 | 126 | 1 | 0 | 1 | 4,124 | 136 | 1 | 0 | 1 | 4,152 | 136 | 1 | 0 | 1 |
| P5 | 51W | 6,260 | 122 | 1 | 0 | 1 | 6,615 | 129 | 1 | 0 | 1 | 6,659 | 130 | 1 | 0 | 1 |

### Electrical Load

| Performance Package | System Watts | Current (A) | | | | |
|---|---|---|---|---|---|---|
| | | 120V | 208V | 240V | 277V | 347V |
| P1 | 11W | 0.099 | 0.055 | 0.049 | 0.046 | 0.045 |
| P2 | 16W | 0.141 | 0.081 | 0.072 | 0.064 | 0.059 |
| P3 | 24W | 0.202 | 0.117 | 0.105 | 0.091 | 0.079 |
| P4 | 30W | 0.280 | 0.162 | 0.144 | 0.128 | 0.095 |
| P5 | 51W | 0.471 | 0.272 | 0.239 | 0.212 | 0.158 |

### Lumen Output in Emergency Mode (4000K, 80 CRI)

| Option | Lumens |
|---|---|
| E4WH | 695 |
| E8WC | 1,413 |

### Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

| Ambient | | Lumens Multiplier |
|---|---|---|
| 0°C | 32°F | 1.04 |
| 10°C | 50°F | 1.03 |
| 20°C | 68°F | 1.01 |
| 25°C | 77°F | 1.00 |
| 30°C | 86°F | 0.99 |
| 40°C | 104°F | 0.97 |

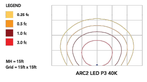
### Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a 25°C ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11). To calculate L27, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

| Operating Hours | 0 | 25,000 | 50,000 | 100,000 |
|---|---|---|---|---|
| Lumen Maintenance Factor | 1.0 | >0.96 | >0.93 | >0.88 |

## Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit the Lithonia Lighting ARC LED homepage. Tested in accordance with IESNA LM-79 and LM-80 standards.




ARC2 LED P3 40K


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PROJECT NAME:
CIRCLE K
ERWIN, NC
DRAWING NUMBER:
RL-10910-S1

CIRCLE K™

| AREA | | QTY | LABEL | DESCRIPTION |
|---|---|---|---|---|
| | | 5 | A34 | RSX2 LED P2 50K R3 MVOLT SPA FAO (SETTING 4) |
| | | 2 | A3B4 | RSX2 LED P2 50K R3 MVOLT SPA HS FAO (SETTING 4) |
| | | 2 | A3B7 | RSX2 LED P2 50K R3 MVOLT SPA HS FAO (SETTING 7) |
| | | 3 | A44 | RSX2 LED P2 50K R4 MVOLT SPA FAO (SETTING 4) |
| | | 2 | A4B4 | RSX2 LED P2 50K R4 MVOLT SPA HS FAO (SETTING 4) |



ADDITIONAL FIXTURE INFO

| CANOPY | | QTY | LABEL | DESCRIPTION |
|---|---|---|---|---|
| | | 24 | CAN | PCNY LED ALO2 SWW2 (50K) FPCL MVOLT (SW. POS. 2) |

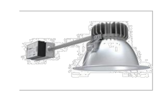





ADDITIONAL FIXTURE INFO

INSTALL INSTRUCTIONS

| DOWNLIGHT | | QTY | LABEL | DESCRIPTION |
|---|---|---|---|---|
| | | 9 | L1 | LBR6 ALO2 20LM SWW1 (4000K) AR LSS MWD 90CRI |



ADDITIONAL FIXTURE INFO

| STREET WRAP | | QTY | LABEL | DESCRIPTION |
|---|---|---|---|---|
| | | 2 | L2 | M-SX024-40 (15 FT) |
| | | 2 | L3 | M-SX024-40 (12 FT) |



| STREET FIGHTER | | QTY | LABEL | DESCRIPTION |
|---|---|---|---|---|
| | | 58 | SF | PL-OP2-PD324-P-NW |
| | | 2 | SF02 | PL-OP2-PD324-P-NW |
| | | 19 | SF04 | PL-OP2-PD324-P-NW |
| | | 27 | SF12 | PL-OP2-PD324-P-NW |



# RSX2 LED
Area Luminaire

Catalog Number
Notes
Type

## Introduction
The new RSX LED Area family delivers maximum value by providing significant energy savings, long life and outstanding photometric performance at an affordable price. The RSX2 delivers 11,000 to 31,000 lumens allowing it to replace 250W to 1000W HID luminaires.

The RSX features an integral universal mounting mechanism that allows the luminaire to be mounted on most existing drill hole patterns. This "no-drill" solution provides significant labor savings. An easy-access door on the bottom of mounting arm allows for wiring without opening the electrical compartment. A mast arm adaptor, adjustable integral slipfitter and other mounting configurations are available.

## Specifications

| | |
|---|---|
| EPA (ft²@0°): | 0.69 ft² (0.06 m²) |
| Length: | 29.3" (74.4 cm) (SPA mount) |
| Width: | 13.4" (34.0 cm) |
| Height: | 3.0" (7.6 cm) Main Body; 7.2" (18.3 cm) Arm |
| Weight: (SPA mount) | 30.0 lbs (13.6 kg) |

design select — Items marked by a shaded background qualify for the Design Select program and ship in 15 days or less. To learn more about Design Select, visit www.acuitybrands.com/designselect. *See ordering tree for details

Design Select options indicated by this color background.

## Ordering Information
EXAMPLE: RSX2 LED P6 40K R3 MVOLT SPA DDBXD

| Series | Performance Package | Color Temperature | Distribution | Voltage | Mounting |
|---|---|---|---|---|---|
| RSX2 LED | P1, P2, P3, P4, P5, P6 | 30K 3000K; 40K 4000K; 50K 5000K | R2 Type 2 Wide; R3 Type 3 Wide; R3S Type 3 Short; R4 Type 4 Wide; R4S Type 4 Short; R5 Type 5 Wide; R5S Type 5 Short; AFR Automotive Front Row; AFRR90 Automotive Front Row Right Rotated; AFRL90 Automotive Front Row Left Rotated | MVOLT (120V-277V); HVOLT (347V-480V); XVOLT (277V-480V); (use specific voltage for options as noted) 120, 208, 240, 277, 347, 480 | SPA Square pole mounting; RPA Round pole mounting; MA Mast arm adaptor (fits 2-3/8" OD horizontal tenon); IS Adjustable slipfitter (fits 2-3/8" OD tenon); WBA Wall bracket; WBASC Wall bracket with surface conduit box; AASP Adjustable tilt arm square pole mounting; AARP Adjustable tilt arm round pole mounting; AAWB Adjustable tilt arm with wall bracket; AAWSC Adjustable tilt arm wall bracket and surface conduit box |

| Options | | Finish |
|---|---|---|
| Shipped Installed: HS House-side shield; PE Photocontrol, button style; PER7 Seven-wire twist-lock receptacle only (no controls); SF Single fuse (120, 277, 347); DF Double fuse (208, 240, 480); SPD20KV 20KV Surge pack (10KV standard); FAO Field adjustable output; DMG 0-10V dimming extend out back of housing for external control (control ordered separate); DS Dual switching | Shipped Installed: *Standalone and Networked Sensors/Controls (factory default settings, see table page 9); NLTAIR2 PIRHN nLight AIR generation 2, with Networked, Bi-Level motion/ambient sensor; BAA Buy America(n) Act and/or Build America Buy America Qualified; CCE Coastal Construction. *Note: NLTAIR2 PIRHN with nLight Air can be used as a standalone dimming sensor with out-of-box settings or as a wireless networked solution. See factory default settings table. Sensor coverage pattern is affected when luminaire is tilted. Shipped Separately (requires some field assembly): EGS External glare shield; EGFV External glare full visor (360° around light aperture); BS Bird spikes | DDBXD Dark Bronze; DBLXD Black; DNAXD Natural Aluminum; DWHXD White; DDBTXD Textured Dark Bronze; DBLBXD Textured Black; DNATXD Textured Natural Aluminum; DWHGXD Textured White |


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## Ordering Information

### Accessories
Ordered and shipped separately.

| | |
|---|---|
| RSX2HS | RSX2 House side shield (includes 2 shields) |
| RSX2EGS (FINISH) U | External glare shield (specify finish) |
| RSX2HSAFRR (FINISH) U | RSX2 House side shields for AFR rotated optics (includes 2 shields) |
| RSX2EGFV (FINISH) U | External glare full visor (specify finish) |
| RSXRPA (FINISH) U | RSX Universal round pole adaptor plate (specify finish) |
| RSXWBA (FINISH) U | RSX WBA wall bracket (specify finish) |
| RSXSCB (FINISH) U | RSX Surface conduit box (specify finish, for use with WBA, WBA not included) |
| DLL127F 1.5 JU | Photocell -SSL twist-lock (120-277V) |
| DLL347F 1.5 CUL JU | Photocell -SSL twist-lock (347V) |
| DLL480F 1.5 CUL JU | Photocell -SSL twist-lock (480V) |
| DSHORT SBK U | Shorting cap |

NOTES
1. Any Type 5 distribution, is not available with WBA.
2. MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
3. HVOLT driver operates on any line voltage from 347-480V (50/60 Hz).
4. XVOLT driver not available with P1. XVOLT driver operates on any line voltage from 277V-480V (50/60 Hz). XVOLT not available with fusing (SF or DF) and not available with PE.
5. Single fuse (SF) requires 120V, 277V or 347V. Double fuse (DF) requires 208V, 240V or 480V.
6. Maximum tilt is 90° above horizontal.
7. It may be ordered as an accessory.
8. Requires MVOLT or 347V.
9. Two or more of the following options cannot be combined including PE, DMG, PER7, FAO, DS and NLTAIR2 PIRHN. (Exception: PE and FAO can be combined; also PE and DMG can be combined.)
10. Compatible with standard twist-lock photocells for dusk to dawn operation or advanced control nodes that provide 0-10V dimming signals. Wire 4/Wire 5 wired to dimming leads on driver. Wire6/Wire7 capped inside luminaire. Twistlock photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting Cap included.
11. For units with option PER7, the mounting must be restricted to +/- 45° from horizontal aim per ANSI C136.10-2010.
12. DS requires (2) separately switched circuits. DS provides 50/50 fixture operation via (2) different sets of leads using (2) drivers. DS only available with packages P5 and P6.
13. Must be ordered with PIRHN.
14. Requires MVOLT or HVOLT.
15. Must be ordered with NLTAIR2. For additional information on PIRHN visit here.
16. CCE option not available with WBA, WBASC, AASP, AARP, AAWB, AAWBSC, EGS, EGFV and BS.
17. Must be ordered with fixture for factory pre-drilling.
18. Requires luminaire to be specified with PER7 option. Ordered and shipped as a separate line item from Acuity Brands Controls.

## External Shields
House Side Shield — External Glare Shield — External 360 Full Visor

## Pole/Mounting Informatiion
Accessories including bullhorns, cross arms and other adpaters are available under the accessories tab at Lithonia's Outdoor Poles and Arms product page. Click here to visit Accessories.

HANDHOLE ORIENTATION — RSX POLE DRILLING (Template #8, Top of Pole, 0.563", 1.325", 2.650", 0.400" (2 PLCS)) — RSX STANDARD ARM & ADJUSTABLE ARM (2.65", 5.25")

### Round Tenon Mount - Pole Top Slipfitters

| Tenon O.D. | RSX Mounting | Single | 2 at 180° | 2 at 90° | 3 at 120° | 3 at 90° | 4 at 90° |
|---|---|---|---|---|---|---|---|
| 2-3/8" | RPA, AARP | AS3-5 190 | AS3-5 280 | AS3-5 290 | AS3-5 320 | AS3-5 390 | AS3-5 490 |
| 2-7/8" | RPA, AARP | AST25-190 | AST25-280 | AST25-290 | AST25-320 | AST25-390 | AST25-490 |
| 4" | RPA, AARP | AST35-190 | AST35-280 | AST35-290 | AST35-320 | AST35-390 | AST35-490 |

### Drill/Side Location by Configuration Type

| Drilling Template | Mounting Option | Single | 2 @ 180 | 2 @ 90 | 3 @ 120 | 3 @ 90 | 4 @ 90 |
|---|---|---|---|---|---|---|---|
| | Head Location | Side B | Side B & D | Side B & C | Round Pole Only | Side B, C & D | Side A, B, C & D |
| #8 | Drill Nomenclature | DM19AS | DM28AS | DM29AS | DM32AS | DM39AS | DM49AS |

### RSX2 - Luminaire EPA
*Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

| Mounting Type | Tilt | Single | 2@90 | 2@180 | 3@90 | 3@120 | 4@90 | 2 Side by Side | 3 Side by Side | 4 Side by Side |
|---|---|---|---|---|---|---|---|---|---|---|
| SPA - Square Pole Adaptor | 0° | 0.69 | 1.22 | 1.27 | 1.8 | 1.61 | 2.39 | 1.37 | 2.06 | 2.74 |
| RPA - Round Pole Adaptor | 0° | 0.74 | 1.27 | 1.37 | 1.9 | 1.71 | 2.49 | 1.42 | 2.16 | 2.84 |
| MA - Mast Arm Adaptor | 0° | 0.61 | 1.14 | 1.11 | 1.64 | 1.45 | 2.23 | 1.29 | 1.9 | 2.58 |
| IS - Integral Slipfitter, AASP/AARP - Adjustable Arm Square/Round Pole | 0° | 0.69 | 1.22 | 1.27 | 1.8 | 1.61 | 2.39 | 1.37 | 2.06 | 2.74 |
| | 10° | 0.53 | 1.06 | 1.05 | 1.58 | 1.37 | 2.08 | 1.06 | 1.59 | 2.12 |
| | 20° | 0.52 | 1.02 | 1.03 | 1.52 | 1.33 | 2.02 | 1.03 | 1.55 | 2.07 |
| | 30° | 0.64 | 1.11 | 1.18 | 1.63 | 1.45 | 2.21 | 1.27 | 1.91 | 2.54 |
| | 40° | 0.81 | 1.21 | 1.35 | 1.74 | 1.65 | 2.39 | 1.62 | 2.43 | 3.23 |
| | 45° | 0.91 | 1.25 | 1.5 | 1.81 | 1.75 | 2.48 | 1.82 | 2.73 | 3.64 |
| | 50° | 1.34 | 1.83 | 2.17 | 2.61 | 2.56 | 3.62 | 2.68 | 4.02 | 5.36 |
| | 60° | 2.2 | 2.97 | 3.57 | 4.24 | 4.17 | 5.89 | 4.41 | 6.61 | 8.82 |
| | 70° | 2.86 | 4.13 | 4.7 | 5.89 | 5.71 | 8.21 | 5.71 | 8.57 | 11.42 |
| | 80° | 3.4 | 5.13 | 5.67 | 7.34 | 7.09 | 10.21 | 6.79 | 10.19 | 13.59 |
| | 90° | 3.85 | 5.96 | 6.55 | 8.58 | 8.31 | 11.88 | 7.70 | 11.56 | 15.41 |


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# PCNY LED
LED Canopy/Ceiling Luminaire

Catalog Number
Notes
Type

## Introduction
The all-new PCNY LED luminaire is designed to provide exceptional energy savings and versatility in one package. Features such as Adjustable Lumen Output (ALO) and replaceable decorative cover make PCNY LED suitable for a wide variety of applications.

With over 174 LPW the PCNY LED delivers up to 80% in energy savings when replacing metal halide luminaires. With over 100,000 hourlife expectancy (12+ years of 24/7 continuous operation), the PCNY LED luminaire provides significant maintenance savings over traditional luminaires.

## Specifications
PCNY LED
Width: 15.2"
Height: 9.4"
Depth: 15.2"
Weight: 10.67lbs

## Ordering Information
EXAMPLE: PCNY LED ALO1 50K FPCL MVOLT DWHXD M3

PCNY LED

| Catalog | Lumens | CCT | Lens | Voltage | Wattage | Color | Packaging | Cicode | UPC | Pallet Qty |
|---|---|---|---|---|---|---|---|---|---|---|
| PCNY LED ALO1 50K FPCL MVOLT DWHXD M3 | 7,500-13,000 | 50K | PC, Flat Clear | 120 - 277 | 46-84 | White | Master Pack 3 | 281YFA | 19618374149 | 36 |
| PCNY LED ALO1 40K FPCL MVOLT DWHXD M3 | 7,500-13,000 | 40K | PC, Flat Clear | 120 - 277 | 46-84 | White | Master Pack 3 | 2836H9 | 19758918596 | 36 |
| PCNY LED ALO2 SWW2 FPCL MVOLT DWHXD M3 | 4,000-20,000 | 30K/40K/50K | PC, Flat Clear | 120 - 277 | 25-131 | White | Master Pack 3 | 2877RH | 197590138180 | 36 |
| PCNY LED ALO2 SWW2 FTL MVOLT DWHXD M3 | 4,000-20,000 | 30K/40K/50K | Forward Throw | 120 - 277 | 25-131 | White | Master Pack 3 | 2877RJ | 197590138227 | 36 |
| PCNY LED ALO2 57K FPCL MVOLT DWHXD M3 | 4,000-20,000 | 57K | PC, Flat Clear | 120 - 277 | 25-131 | White | Master Pack 3 | 287HK4 | 197590198405 | 36 |
| PCNY LED ALO2 57K FTL MVOLT DWHXD M3 | 4,000-20,000 | 57K | Forward Throw | 120 - 277 | 25-131 | White | Master Pack 3 | 287HK6 | 197590198436 | 36 |

Accessories

| Catalog | Description | Use | Dimensions |
|---|---|---|---|
| FP12SM* | PCNY/XPCNY Backplate for 12" Decks | Covers Existing Hole if Larger than Fixture | 11.5" x 24" x 18GA Galv Steel |
| FP16SM* | PCNY/XPCNY Backplate for 16" Decks | Covers Existing Hole if Larger than Fixture | 15.5" x 24" x 18GA Galv Steel |
| BP18SM* | PCNY/XPCNY 18" Beautyplate | Covers Existing Footprint of Existing Fixture | 18" x 18" x 16GA Aluminum |
| BP26SM* | PCNY/XPCNY 26" Beautyplate | Covers Existing Footprint of Existing Fixture | 26" x 26" x 16GA Aluminum |
| RF2SM* | Retrofit CREE 304 PCNY / SCNY / XPCNY | Retrofits Cree 304 with new Fixture | 15"x15" Aluminum |
| PCNYDT DWHXD J12 | PCNY White Decorative Trim (12 Pack) (standard w/fixture) | Covers Mounting Hardware | 15.2" x 15.2" Composite |
| PCNYDT DBLXD J12 | PCNY Black Decorative Trim (12 Pack) | Covers Mounting Hardware | 15.2" x 15.2" Composite |
| PCNYDT DBLXD M12 | PCNY Black Decorative Trim (Unit Pack) | Covers Mounting Hardware | 15.2" x 15.2" Composite |
| PCNYDT DDBXD M12 | PCNY Dark Bronze Decorative Trim (Unit Pack) | Covers Mounting Hardware | 15.2" x 15.2" Composite |

*Add "U" to the end of the catalog number for individual unit pack or "J6" for packs of 6 units for catalog numbers which do not include J12

## FEATURES & SPECIFICATIONS

**INTENDED USE**
The PCNY LED is a great choice for both new and retrofit petroleum canopy applications. With its high efficacy, clean looks and versatility makes it suitable for a wide range of applications like retail gas stations, convenience stores, and other canopy applications. Standard symmetric lens distribution provides optimal illumination under petroleum canopies and forward throw lens distribution provides light beyond canopy often eliminating the need for flood lighting on top of canopy.

**CONSTRUCTION**
Die-cast aluminum housing for the light engine is optimized for thermal management without the need for external fins. The wet location rated LED driver box is separated from the heat-generating light engine and raised above the canopy surface to promote long life and prevent water entry. The light engine housing is completely sealed against moisture and environmental contaminants (IP66) and is suitable for hose-down application.

**ELECTRICAL**
Light engine consists of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L77/100,000 hours at 25°C). The electronic driver has a power factor of >90% and THD <20%. A 10kV surge protection device is included, which meets a minimum Category C low operation (per ANSI/IEEE C62.41.2). The fixture is supplied with a 0-10V driver and is dimmable by 0-10V controls.

**INSTALLATION**
The product can be installed by one person to a 12" or 16" deck panel. Requires only 2.5" hole in the deck panel for new installations but can accommodate up to a 4" hole for retrofit applications. The product can also be installed in recessed canopy applications. The snap-in decorative trim covers all mounting hardware. The Adjustable Lumen Output (ALO) module in the driver box allows the contractor to customize the lumens (3 levels) based on application needs.

**LISTINGS**
UL certified to U.S. and Canadian standards. Rated for -40°C to 40°C ambient conditions. DesignLights Consortium® (DLC) Premium qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified. NOM Certified.

**WARRANTY**
5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

**Note:** Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.


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## Photometric Diagrams
Full photometric data report available within 2 weeks from request. Contact Acuity Tech Support.

Isoilluminance — Flat Clear Lens; Isoilluminance — Forward Throw Lens (20 fc, 10 fc, 5 fc, 1 fc, 0.5 fc, 0.1 fc, 50% Max Cd; Distance in units of mount height (20ft); Max Cd)

## Performance Data

| Ambient Temp | | Lumen Multiplier |
|---|---|---|
| 0°C | 32°F | 1.04 |
| 10°C | 50°F | 1.03 |
| 20°C | 68°F | 1.01 |
| 25°C | 77°F | 1.00 |
| 30°C | 86°F | 0.99 |
| 40°C | 104°F | 0.98 |

Predicted Lumen Maintenance

| 0 Hrs | 25,000 Hrs | 50,000 Hrs | 100,000 Hrs |
|---|---|---|---|
| 100% | 94% | 88% | 77% |

| Lumen Setting | Watts | Current 120V | 240V | 277V |
|---|---|---|---|---|
| ALO1-3 | 84 | 0.711 | 0.368 | 0.332 |
| ALO1-2 | 62 | 0.520 | 0.275 | 0.259 |
| ALO1-1 | 46 | 0.392 | 0.214 | 0.211 |
| ALO2-7 | 128 | 1.103 | 0.578 | 0.497 |
| ALO2-6 | 100 | 0.849 | 0.456 | 0.399 |
| ALO2-5 | 80 | 0.677 | 0.372 | 0.332 |
| ALO2-4 | 59 | 0.519 | 0.299 | 0.272 |
| ALO2-3 | 50 | 0.429 | 0.257 | 0.239 |
| ALO2-2 | 39 | 0.333 | 0.214 | 0.202 |
| ALO2-1 | 25 | 0.247 | 0.176 | 0.170 |

Lumen Output Flat Polycarbonate Clear Lens (FPCL)

| Performance Package | Setting | System Watts | 30K Lumens | 30K LPW | 40K Lumens | 40K LPW | 50K Lumens | 50K LPW |
|---|---|---|---|---|---|---|---|---|
| ALO1 | 3 | 84 | 13,130 | 156 | 13,634 | 162 | 13,532 | 161 |
| ALO1 | 2 | 62 | 9,267 | 149 | 9,727 | 157 | 9,375 | 151 |
| ALO1 | 1 | 46 | 7,031 | 153 | 7,389 | 161 | 7,121 | 155 |
| ALO2 | 7 | 128 | 19,909 | 156 | 21,236 | 166 | 20,964 | 164 |
| ALO2 | 6 | 100 | 15,695 | 157 | 16,638 | 166 | 16,470 | 165 |
| ALO2 | 5 | 80 | 12,603 | 158 | 13,291 | 166 | 13,439 | 168 |
| ALO2 | 4 | 59 | 9,699 | 164 | 10,128 | 172 | 10,023 | 170 |
| ALO2 | 3 | 50 | 7,925 | 159 | 8,257 | 165 | 8,388 | 168 |
| ALO2 | 2 | 39 | 6,016 | 154 | 6,226 | 160 | 6,391 | 164 |
| ALO2 | 1 | 25 | 4,228 | 169 | 4,358 | 174 | 3,889 | 156 |

(30K = 3000K, 70CRI; 40K = 4000K, 70CRI; 50K = 5000K, 70CRI)

Lumen Output Forward Throw Lens (FTL)

| Performance Package | Setting | System Watts | 30K Lumens | 30K LPW | 40K Lumens | 40K LPW | 50K Lumens | 50K LPW |
|---|---|---|---|---|---|---|---|---|
| ALO2 | 7 | 131 | 19,509 | 149 | 20,933 | 160 | 20,813 | 159 |
| ALO2 | 6 | 100 | 15,370 | 154 | 16,387 | 164 | 16,436 | 164 |
| ALO2 | 5 | 80 | 12,322 | 154 | 13,038 | 163 | 13,133 | 164 |
| ALO2 | 4 | 61 | 9,479 | 155 | 9,943 | 163 | 10,099 | 166 |
| ALO2 | 3 | 50 | 7,741 | 155 | 8,077 | 162 | 8,237 | 165 |
| ALO2 | 2 | 38 | 5,876 | 154 | 6,101 | 160 | 6,258 | 164 |
| ALO2 | 1 | 28 | 4,146 | 148 | 4,277 | 153 | 4,413 | 158 |


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# LITHONIA LIGHTING

Catalog Number
Notes
Type

# LBR6
6" Open and Wallwash LED Retrofit/Remodel Downlight

Retrofit | Remodel — Open Trim — Wallwash Trim

## FEATURES & SPECIFICATIONS

**INTENDED USE** — Typical applications include corridors, lobbies, conference rooms and private offices.

**CONSTRUCTION** — Retrofit, remodel, and new construction mounting types. See table for compatible ceiling openings and thickness range.
Optional goof rings available for additional overlap trim coverage.
1/2"-1-1/2" ceiling thickness
25° ambient temperature
IC rated up to 1000lm

**OPTICS** — LEDs are binned to a 3-step Mac Adam Ellipse. 55° cutoff
New construction frame accessories approved for 8 (4 in/4 out) No. 12 AWG conductors rated for 90°C through wiring.
80CRI standard (90CRI optional)

**UGR** — UGR is zero for fixtures aimed at nadir with a cut-off equal to or less than 60deg, per CIE 117-1996 Discomfort Glare in Interior Lighting. UGR FAQ

**ELECTRICAL** — Adjustable lumen output with four module options. Fixed lumen options also available.
MVOLT 120/277V 50/60Hz driver (0-10V & 120V Phase Dimming to 10% or 1% min dimming level)
FCC CFR Title 47 Part 15 Class A for 277V. FCC CFR Title 47 Part 15 Class B for 120V.

**LUMEN MAINTENANCE** — L80 at 60,000 hours

**LISTINGS** — Certified to US and Canadian safety standards. Damp location standard (Wet Location (WL) optional, requires covered ceiling). TAA compliant. UFC (3-530-01) specification compliant for power factor and THD. GSA P100 6.2.4 compliant for power quality at full output; compliant up to 2000lm at fully dimmed output. Drivers are ROHS compliant
Title 24 compliant (90CRI, up to 1000lm).

**WARRANTY** — 5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

**Note:** Actual performance may differ as a result of end-user environment and application.
All values are design or typical values, measured under laboratory conditions at 25 °C.
Specifications subject to change without notice.

### Performance Data

LBR6 AR LSS MWD — 80CRI

| Lumen Output | Wattage | 30K Delivered Lumens | 30K LPW | 35K Delivered Lumens | 35K LPW | 40K Delivered Lumens | 40K LPW | 50K Delivered Lumens | 50K LPW |
|---|---|---|---|---|---|---|---|---|---|
| ALO1 (500LM) | 6 | 571 | 99 | 585 | 101 | 599 | 103 | 617 | 105 |
| ALO1 (750LM) | 9 | 905 | 102 | 926 | 103 | 948 | 105 | 977 | 108 |
| ALO1 (1000LM) | 13 | 1270 | 98 | 1300 | 100 | 1330 | 102 | 1372 | 104 |
| ALO2 (1000LM) | 13 | 1346 | 108 | 1378 | 110 | 1410 | 112 | 1454 | 115 |
| ALO2 (1500LM) | 19 | 1965 | 105 | 2011 | 107 | 2059 | 109 | 2123 | 111 |
| ALO2 (2000LM) | 25 | 2476 | 100 | 2533 | 101 | 2593 | 103 | 2674 | 106 |
| ALO3 (2000LM) | 25 | 2547 | 103 | 2606 | 105 | 2668 | 107 | 2751 | 109 |
| ALO3 (2500LM) | 32 | 3075 | 98 | 3146 | 100 | 3221 | 101 | 3321 | 104 |
| ALO3 (3000LM) | 38 | 3492 | 93 | 3573 | 95 | 3658 | 96 | 3771 | 99 |
| ALO4 (4000LM) | 39 | 4180 | 107 | 4265 | 109 | 4350 | 112 | 4393 | 113 |
| ALO4 (4500LM) | 44 | 4613 | 105 | 4707 | 107 | 4801 | 109 | 4848 | 110 |
| ALO4 (5000LM) | 49 | 5017 | 102 | 5119 | 104 | 5221 | 107 | 5273 | 108 |

LBR6 MS MWD — 80CRI

| Lumen Output | Wattage | 30K Delivered Lumens | 30K LPW | 35K Delivered Lumens | 35K LPW | 40K Delivered Lumens | 40K LPW | 50K Delivered Lumens | 50K LPW |
|---|---|---|---|---|---|---|---|---|---|
| ALO1 (500LM) | 6 | 480 | 99 | 584 | 101 | 597 | 102 | 616 | 105 |
| ALO1 (750LM) | 9 | 760 | 102 | 924 | 103 | 946 | 105 | 975 | 108 |
| ALO1 (1000LM) | 13 | 1067 | 98 | 1297 | 100 | 1328 | 102 | 1369 | 104 |
| ALO2 (1000LM) | 13 | 1131 | 108 | 1375 | 110 | 1408 | 112 | 1451 | 115 |
| ALO2 (1500LM) | 19 | 1651 | 105 | 2007 | 106 | 2055 | 108 | 2118 | 111 |
| ALO2 (2000LM) | 25 | 2079 | 99 | 2528 | 101 | 2588 | 103 | 2668 | 105 |
| ALO3 (2000LM) | 25 | 2139 | 103 | 2601 | 104 | 2663 | 106 | 2745 | 109 |
| ALO3 (2500LM) | 32 | 2583 | 98 | 3140 | 99 | 3214 | 101 | 3314 | 103 |
| ALO3 (3000LM) | 38 | 2933 | 93 | 3566 | 94 | 3651 | 96 | 3764 | 98 |
| ALO4 (4000LM) | 39 | 3511 | 90 | 3583 | 92 | 3654 | 94 | 3690 | 95 |
| ALO4 (4500LM) | 44 | 3875 | 88 | 3954 | 90 | 4033 | 92 | 4072 | 93 |
| ALO4 (5000LM) | 49 | 4214 | 86 | 4300 | 88 | 4386 | 90 | 4429 | 90 |

• Tested in accordance with IESNA LM-79-08. u8226
• Tested to current IES and NEMA standards under stabilized laboratory conditions.
• CRI: 80 typical

design select — Items marked by a shaded background qualify for the Design Select program and ship in 15 days or less. To learn more about Design Select, visit www.acuitybrands.com/designselect. *See ordering tree for details



## LBR6

Design Select options indicated by this color background.

### Module ordering
ORDERING INFORMATION — Lead times will vary depending on options selected. Consult with your sales representative. Example: LBR6 ALO2 SWW1 AR LSS MWD MVOLT UGZ 90CRI

| Series | Lumens ‡ | Color temperature ‡ | Reflector Color | Reflector Flange ‡ | Reflector Finish |
|---|---|---|---|---|---|
| LBR6 6" Retrofit; LBR6WW ‡ 6" Retrofit Wallwash | Adjustable Lumen Output: ALO1 500/750/1000lm; ALO2 1000/1500/2000lm; ALO3 2000/2500/3000lm; ALO4 4000/4500/5000lm. Fixed Lumen Output: 05LM 500lm; 07LM 750lm; 10LM 1000lm; 15LM 1500lm; 20LM 2000lm; 25LM 2500lm; 30LM 3000lm; 40LM 4000lm; 45LM 4500lm; 50LM 5000lm | Switchable CCT: SWW1 3000K-3500K-4000K-5000K. Fixed CCT: 27K 2700K; 30K 3000K; 35K 3500K; 40K 4000K; 50K 5000K | AR Clear; BR ‡ Black painted; MS ‡ Metallic Silver; WR ‡ White painted; TCPC ‡ Custom painted trim; TRALTBD ‡ RAL painted trim | (blank) Self-flanged; TRW White painted flange; TRBL Black painted flange; FCPC Custom painted flange only; FRALTBD RAL painted flange only | LSS Semi-specular |

| Distribution | Voltage | Driver | Emergency ‡ | Control Input ‡ | Options |
|---|---|---|---|---|---|
| MWD Medium wide (1.0 s/mh); WD Wide (1.2s/mh); WW ‡ Wallwash | MVOLT; 120; 277; 347 | UGZ Universal dimming to 10% 0-10V; line voltage dimming (120V); UGZ1 Universal dimming to 1% 0-10V; line voltage dimming (120V); DALI ‡ DALI dimming to 1%; D1 Minimum dimming 1% driver for use with SSAIR | (blank) No Emergency Needed; ELR Battery pack (10W constant power) Non-T20 Compliant remote test switch; ETS Iota Emergency Transfer System; E10WCP Battery pack (10W constant power) T20 Compliant integral test switch; E10WCPR Battery pack (10W constant power) T20 Compliant remote test switch; E10WRSTAR Emergency battery pack, 10W with remote test switch and Iota STAR technology | (blank) No Control Input Needed; SSAIR Wireless standalone embedded control by SensorSwitch; NLIGHT Embedded wired controls from nLight; NLIGHTER Embedded wired controls from nLight with UL924 listed emergency operation; NLTAIR2 nLight® Air enabled; NLTAIREM2 nLight® AIR Dimming Pack Wireless Controls. UL924 Emergency Operation, via power interrupt detection. | 90CRI High CRI (90+); AT ‡ Airtight; EC1 ‡ Extended Conduit (18"); EC6 ‡ Extended Conduit (6ft); WL ‡ Wet Location (IP55); QDS ‡ Quick disconnect plugs; CP ‡ Chicago Plenum |

NOTE: ‡ indicates option value has ordering restrictions. Please reference the Option Value Ordering Restrictions chart below.

‡ Option Value Ordering Restrictions

| Options | Restriction |
|---|---|
| Adjustable Lumens/CCT | Adjustable Lumen Output and Switchable CCT must be specified together (for Example: ALO1 SWW1) |
| Fixed Lumens/CCT | Fixed Lumen Output and Fixed CCT must be specified together (for Example: 10LM 30K) |
| WW | Not available with WL, EL, E10WCP. |
| MS, WR, BR | Not available with LSS reflector finish |
| WR | Not available with TRW |
| BR | Not available with TRBL |
| TRALTBD, FRALTBD | RALTBD for pricing only. Replace with applicable RAL number and finish when ready to order. See the RAL BROCHURE for available color options. Not available with TCPC or FCPC. |
| TCPC, FCPC | CPC options for pricing only. Custom color chip needs to be sent in to your Customer Resolution specialist before order can be processed. Click HERE for more details. Not available with TRAL or FRAL. |
| TRW, TRBL | Available with MS and AR reflectors only. |
| LSS | Not available with BR or WR or MS |
| 347V | Not available with CP, QDS, ELR, E10WCP, E10WCPR, NLIGHT, NLIGHTER, NLTAIR2, or NLTAIREM2 |
| DALI | Not available with fixed lumens or CCT. Max 4500 lumens. |
| E10WCPR | Not available with EC1, EC6, AT, QDS, CP, 347V, NLIGHTER, NLTAIREM2, WL, ALO3 & ALO4 w/DALI, OR 2000–4500 lumens w/SSAIR. |
| E10WCP | Not available with WW, EC1, EC6, AT, QDS, CP, 347V, NLIGHTER, NLTAIREM2, WL, ALO3 & ALO4 w/DALI, OR 2000–4500 lumens w/SSAIR. |
| E10WSTAR | Not available with wet location, EC1, EC6, QDS, CP, 347V, NLIGHTER, NLTAIREM2, ALO3 & ALO4 w/DALI, OR 2000–4500 lumens w/SSAIR. Top access installation or 17.5" plenum clearance required for roomside installation. Not available with integral test switch |
| ELR | Not available EC1, EC6, QDS, CP, 347V, NLIGHTER, NLTAIREM2, ALO3 & ALO4 w/DALI, OR 2000–4500 lumens w/SSAIR. |
| ETS | Not available with, QDS, ELR, E10WCP, E10WCPR, 347V, SSAIR, NLIGHT, NLIGHTER, NLTAIR2, NLTAIREM2, DALI, or D1 drivers |
| SSAIR | Only available with D1 driver. Not available with CP, NLIGHT, NLIGHTER, NLTAIR2, NLTAIREM2, UGZ, or DALI drivers. Max 4500 lumens. Fixed lumens and CCT only. Not available with 2000–4500lm in conjunction with emergency batterypacks. |
| NLIGHT | Must specify UGZ1. Not available with CP, QDS, SSAIR, ETS, UGZ, DALI, or D1 drivers. Not available with 347V. |
| NLIGHTER | Must specify UGZ1. Not available with CP, QDS, ELR, E10WCP, E10WCPR, DALI, or D1 drivers. Not available with 347V. |
| NLTAIR2 | Must specify UGZ1. Not available with CP, QDS, SSAIR, ETS, UGZ, DALI, or D1 drivers. See UL 924 Sequence of Operation table. Non-emergency luminaires with this option can be used as a normal power sensing device for nLight AIR devices and luminaires with EM emergency options. Not available with 347V. |
| NLTAIREM2 | Must specify UGZ1. Not available with CP, QDS, SSAIR, ETS, ELR, E10WCP, E10WCPR, DALI, D1, OR D10 drivers. See UL 924 Sequence of Operation table. |
| WL | Not available with WW, All CP is wet location, except WW (Damp). IP55 rated. Not available with E10WCP |
| QDS | Must be specified for use with LBR_PFWQDS. Not Available with CP, emergency options, or 347V. |
| EC1, EC6 | Not Available with CP, QDS, ELR, E10WCP, or E10WCPR. |
| AT | Standard for CP and IP55, not available with WW. Not available with E10WCP |
| CP | Not available with, QDS, EC1, EC6, ELR, E10WCPR, 347V, SSAIR, NLTAIR2, NLTAIREM2, D1 drivers. For new construction applications, must be specified with LBR_PFWCP. |


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# STREET WRAP™ FLEX BACK-BEND 24 VDC
*Flexible LED illumination*

## Specifications

| | |
|---|---|
| Dimensions L × W × H | 24-ft and custom lengths available |
| Input | 24 V |
| Min. bend radius | 2.36" |
| Power | 3.66 W/ft. |
| Operating temp. | -40° C to +65° C |
| Environment | IP67 |
| Power supply | Principal Sloan 24V |
| Run footage | Max. 24 ft. |
| Applications | Neon tube light source, building and sign outline lighting and cover lighting, indoor/outdoor, cursive letters and design |
| Warranty | 5-year Product/5-year Labor |

* Custom colors will utilize white LEDs behind a color matched silicone over molding and the MOQ is 656.168 ft.

Bends front to back — UV-resistant — Dual extrusion, diffused silicone lens and thermal conductive base — Standard colors cuttable every 3.9370", RGB cuttable every 2.8149"

## Product Options

| CCT/color | Jacket color | Lm/ft | Cut section length | Max. length/ 96 W PS | W/max. length | SKU |
|---|---|---|---|---|---|---|
| 6500 K | White | 305 | 3.9370" | 287.4016" | 87.7 | M-SX024-65 |
| 5000 K | | | | | | M-SX024-50 |
| 4000 K | | | | | | M-SX024-40 |
| Red (623 nm) | Red | 82 | | | | M-SX024-RD |
| Orange (609 nm) | Orange | 116 | | | | M-SX024-OR |
| Yellow (590 nm) | Yellow | 158 | | | | M-SX024-YL |
| Green (525 nm) | Green | 140 | | | | M-SX024-GR |
| Blue (468 nm) | Blue | 20 | | | | M-SX024-BL |
| Cyan | White | 36 | 2.8110" | 287.7244" | 87.5 | M-SX024-CN |
| Pink | | 17 | | | | M-SX024-PK |
| RGB | | N/A | | | | M-SX024-3C |

**IMPORTANT WARRANTY INFO**
**This warranty is void if any cuts are made in the field.**
**Any cuts must be made by Principal Sloan to maintain warranty.**
**NOTE:** The LED neon itself and all its components may not be mechanically stressed. Please ensure that the power supply is adequate to operate the total load. Only qualified personnel should be allowed to perform installations. The design of the housing should be according to the IP standards in the application. If surge protection structure not within power supplier, a lightning protector should be needed additionally. Before cutting and sealing, please read the user manual, and please ensure you have read and fully understand it. Please do not twist the product and do not bend it in wrong direction, see Figure 1 for a correct demonstration.

PRINCIPAL SLOAN — A Principal Industries Company

# STREET WRAP™ FLEX BACK-BEND 24 VDC
*Flexible LED illumination*

## Accessories
Transparent PC clips* A-SXMH-CLPL (* Transparent clips are not warrantied if used in outdoor applications.) — 3.28-ft & 8-ft Aluminum mill finish extrusion for outdoor applications A-SXMH-TRAL — Aluminum mill finish clips for outdoor applications A-SXMH-CLAL

## End Caps*
Silicone end cap A-SXHW-ECSI (* End cap quantities are available upon request.) — Silicone insert, single color X-C-SX-SI1C — Silicone insert, RGB X-C-SX-SI3C — Silicone glue A-SWFX-SA

## Wiring
Single color product (VCC, GND) — RGB product (VCC, Red, Green, Blue)

## Types of Feed
Bottom feed Top view — Bottom feed Front view — End feed Top view — End feed Front view

principalsloan.com
325.227.4577
3490 Venture Dr., San Angelo, TX 76905

5 YEAR Product & Labor WARRANTY

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Specifications subject to change without notice.

PRINCIPAL SLOAN — We Speak Sign Language

# POD 3-24V™
*M-SFPT3-XX-24*

Street Fighter™

POD 3 OPTIONS

| CCT / WAVELENGTH | SKU | Efficacy (TYP) | Intensity | UL Part Number |
|---|---|---|---|---|
| 5000K | M-SFPT3-50-24 | 106 LM/W | 110 LM/mod (394 LM/ft.) | PL-OP2-PD324-P-NW |
| 6800K | M-SFPT3-68-24 | 106 LM/W | 110 LM/mod (394 LM/ft.) | PL-OP2-PD324-P-SW |

SPECIFICATIONS

| | | | |
|---|---|---|---|
| Beam Angle | 30° x 15° | Packaging Per Bag | 88 Mods (24.58ft.) |
| Certifications | UL & cUL Recognized (SAM Manual), CE, RoHs | Per Case | 968 mods (12.465ft.) |
| Dimensions | 0.91"W x 1.73"L x 0.46"H | Bag Color | Green/Green & White |
| Mounting Options | Peel & Stick, Mechanical Screw Hole | Power | 1.04 W/mod (3.58ft.) |
| Input | 24V | Max Mods per Power Supply | 88 |
| Operating Temp | -25° to +65°C | Power Supply | PLED 24V |
| Wire Color | + White Stripe & - White/Black Stripe | Mods per Foot | 3.58 |
| Max Mods in Series | 44 mods | Module on Center Spacing | 3.35" |

PRINCIPAL LED — WE SPEAK SIGN LANGUAGE

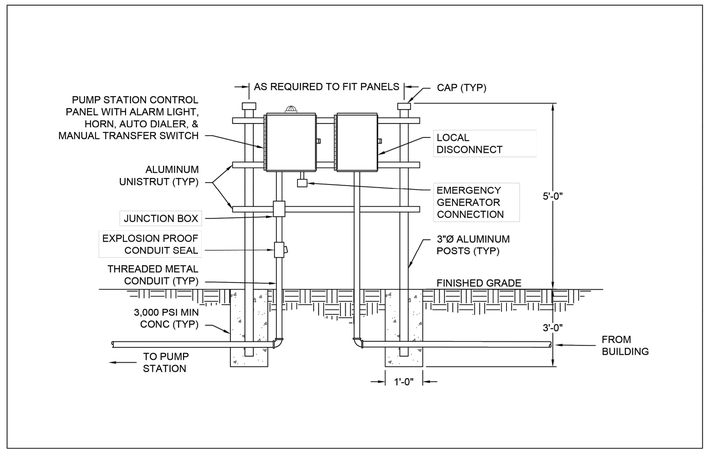
Principal LED | We Speak Sign Language — www.p-led.com | 325.227.4577 | sales@p-led.com

REDLEONARD ASSOCIATES
1340 Kemper Meadow Dr, Forest Park, OH 45240
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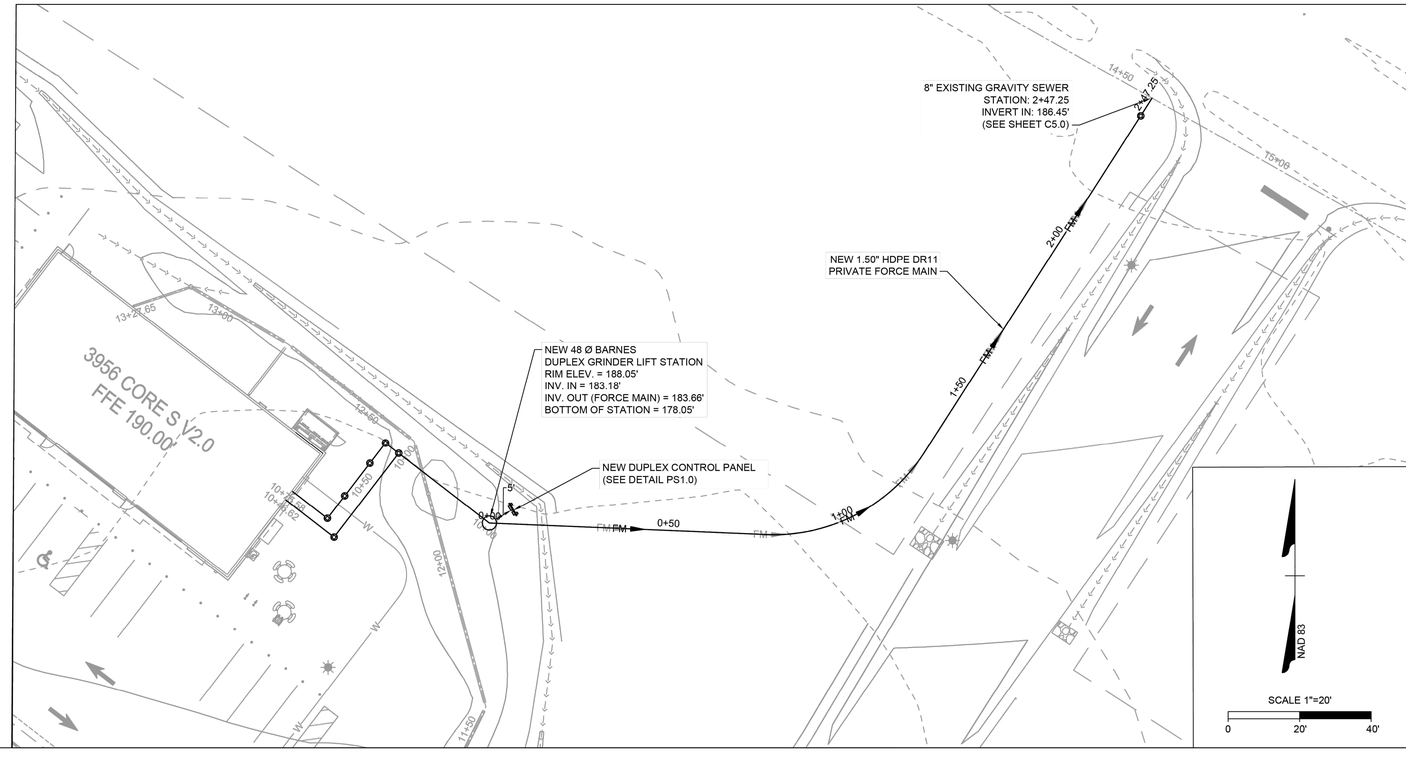
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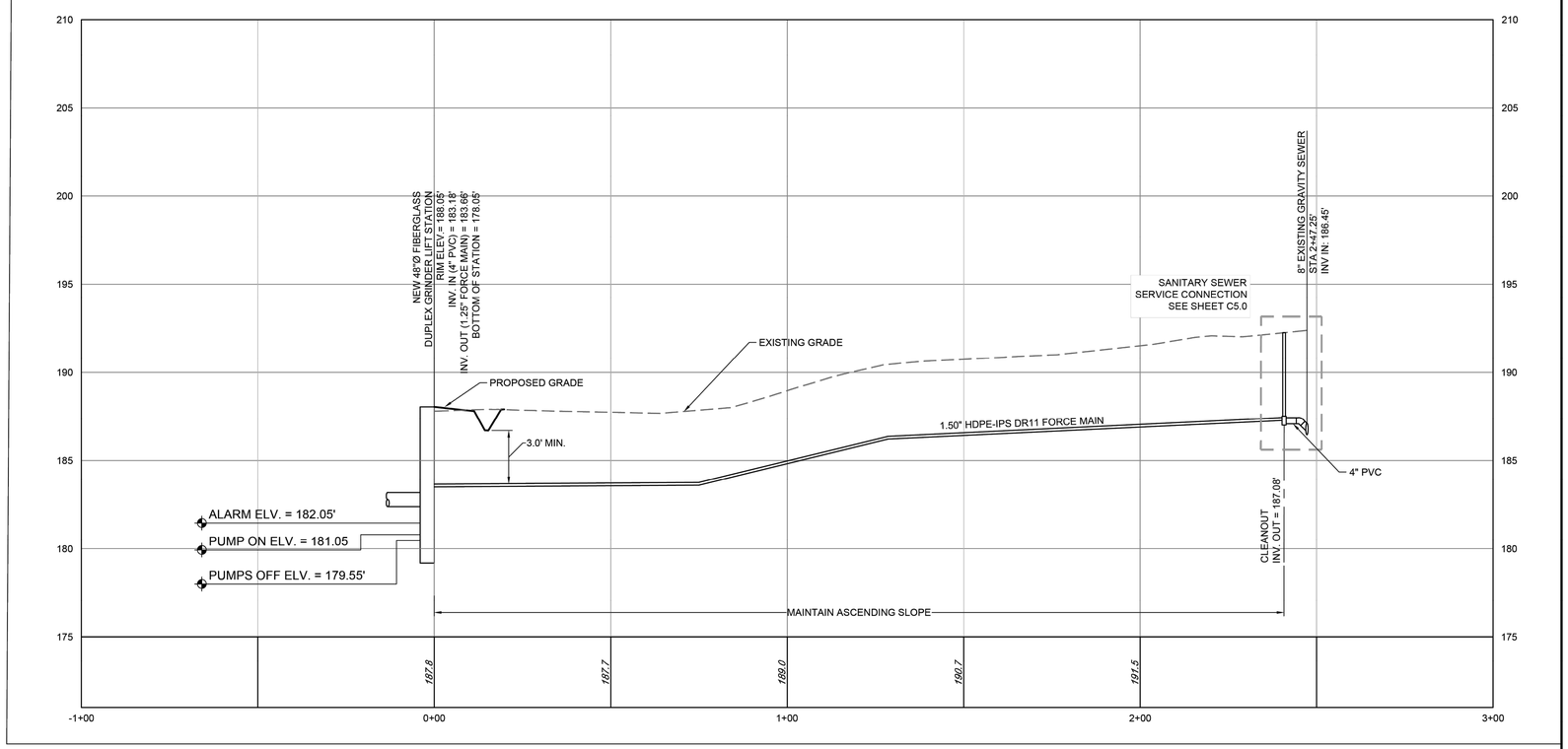
PROJECT NAME:
CIRCLE K
ERWIN, NC
DRAWING NUMBER:
RL-10910-S1

CIRCLE K




CONTROL PANEL
N.T.S.




GENERAL NOTES:

DESIGN CRITERIA:

1. THIS PUMP STATION IS DESIGNED FOR A CONVENIENCE STORE WITH FOOD PREP DISCHARGING A FLOW RATE OF 60 GPD/100SF * 3,956 SF = **2,374 GPD AVERAGE FLOW.** A 4.0 PEAKING FACTOR HAS BEEN APPLIED, RESULTING IN AN ESTIMATED **6.59 GALLONS PER MINUTE (GPM)** PEAK INFLUENT RATE.
2. THE PUMP STATION WILL OPERATE AT 29 GPM WITH A TOTAL DYNAMIC HEAD (TDH) OF 37 FT.
3. PUMP STATION IS NOT LOCATED WITHIN 100-YR FLOODPLAIN ACCORDING TO FEMA FIRM MAP 3720059700J DATED 10/03/2006.

PUMP STATION NOTES:

1. ALL PUMP STATION COMPONENTS AND CONTROLS SHALL BE SUPPLIED BY BARNES.
2. FINAL GRADE SHALL BE GRADED AWAY FROM PUMP STATION RIM TO PREVENT STORM WATER INFLOW.

ELECTRICAL NOTES:

1. ALL ABOVE-GRADE ENCLOSURES INSTALLED UNDER THIS CONTRACT SHALL BE PAD LOCKABLE AND NEMA 4X.
2. ALL WIRE INSTALLED UNDER THIS CONTRACT SHALL BE COPPER.
3. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL CODES AND REGULATIONS; AND THE RECOMMENDATIONS AND REQUIREMENTS OF THE EQUIPMENT MANUFACTURERS.
4. NO ELECTRICAL SPLICES ALLOWED IN WET WELL.
5. ALL EXTERIOR CONDUITS SHALL BE UNDERGROUND AND SHALL BE INSTALLED PER 1996 NEC TABLE 300-5 & TABLE 300-50 AND ARTICLE 300-6 (PROTECTION AGAINST CORROSION).
6. ALL LOCATIONS WHERE PIPES ENTER OR LEAVE THE WET WELL OR VALVE VAULT SHALL BE MADE WATERTIGHT WITH WALL SLEEVE OR NON-SHRINK GROUT.
7. POWER AVAILABLE TO THE PUMP STATION PANEL MUST BE COMPATIBLE WITH 208V 3PH PUMP SELECTED.

NORTH CAROLINA PROFESSIONAL SEAL 052736 ENGINEER ASHLEY KABAT CUTRIGHT
26-09-2025

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SCALE AS SHOWN

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NORTH CAROLINA LICENSE NO. C-1652

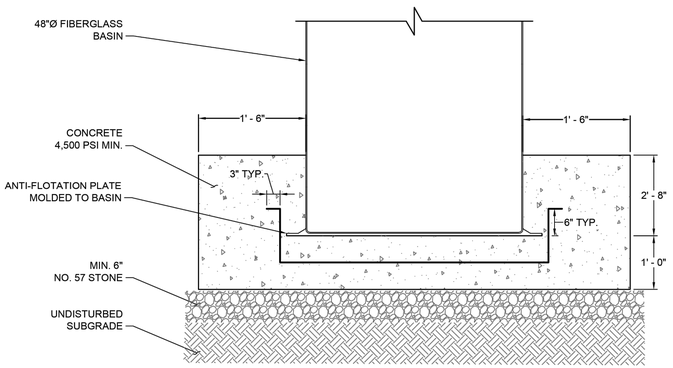
CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC
TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA

PRIVATE LIFT STATION SITE LAYOUT

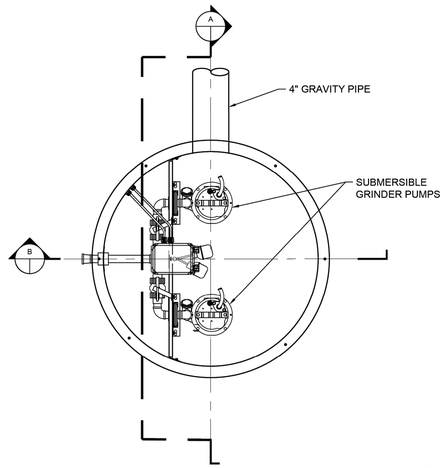
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SHEET NO. PS1.0

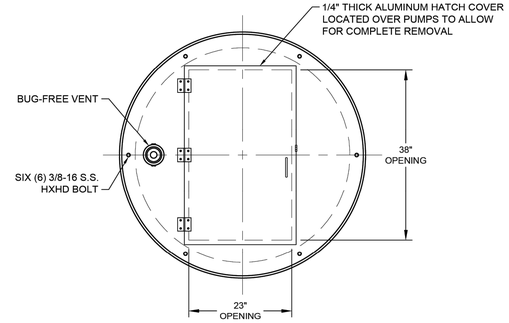
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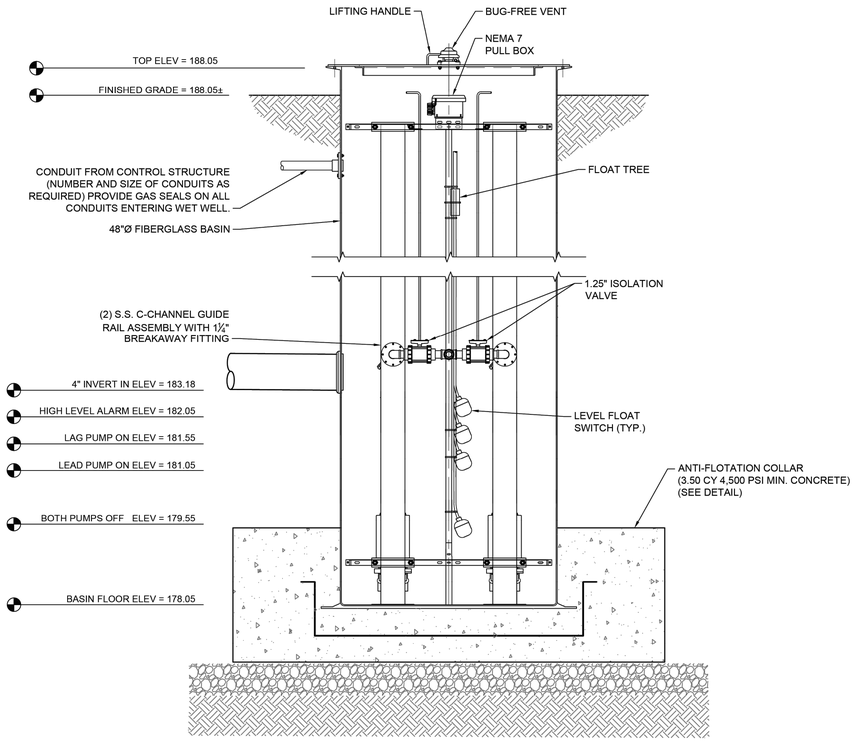

**ANTI-FLOTATION COLLAR AND BASE**



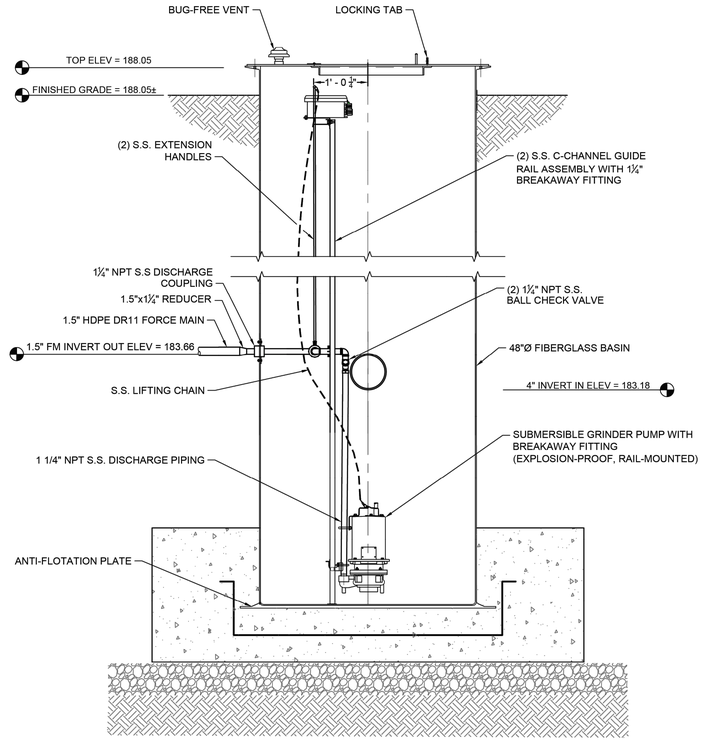

**PUMP STATION PLAN**

SCALE: 3/4"=1'-0"




**PUMP STATION SECTION A**

SCALE: 3/4"=1'-0"




**PUMP STATION SECTION B**

SCALE: 3/4"=1'-0"


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TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

# CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC

TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA

## PRIVATE LIFT STATION DETAILS

JOB NO. 37630.232
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BARNES

## Specifications

| | |
|---|---|
| **IMPELLER:** | **Design:** 12 Vane vortex, with pump out vanes on back side. Dynamically balanced, ISO G6.3.<br>**Material:**85-5-5-5 Bronze |
| **SEAL:** | **Design:**Single Mechanical<br>**Material:**<br>• **Rotating Faces:** Silicon-carbide<br>• **Stationary Faces:** Silicon-carbide<br>• **Elastomer:** Buna-N<br>• **Hardware:** 300 Series stainless steel |
| **CORD ENTRY:** | 30 ft. (9.1 m) Std. Cord. Custom molded quick connect, for sealing and strain relief |
| **CORD:** | CSA/UL Approved, 12/4 Type SOW |
| **DISCHARGE:** | 1¼" NPT |
| **LIQUID TEMPERATURE:** | 104°F (40°C) Continuous |
| **VOLUTE:** | Cast iron ASTM A-48, class 30 |
| **MOTOR HOUSING:** | Cast iron ASTM A-48, class 30 |
| **SEAL PLATE:** | Cast Iron ASTM A-48, Class 30 |
| **CUTTER PLATE:** | Hardened 440C stainless steel Rockwell® C-55 |
| **CUTTER:** | Hardened 440C stainless steel, Rockwell® C-55 |
| **SHAFT:** | 416 Stainless steel |
| **O-RINGS:** | Buna-N |
| **HARDWARE:** | 300 Series stainless steel |
| **PAINT:** | Powder coat |
| **UPPER BEARING:** | **Design:**Single row, ball<br>**Lubrication:**Oil<br>**Load:**Radial & thrust |
| **LOWER BEARING:** | **Design:**Single row, ball<br>**Lubrication:**Oil<br>**Load:**Radial & thrust |
| **UPPER BEARING:** | **Design:**Single row, ball<br>**Lubrication:**Oil<br>**Load:**Radial |
| **MOTOR:** | **Design:**NEMA L-Single phase torque curve, oil-filled, squirrel cage induction (includes overload protection in the motor), NEMA B three phase torque curve<br>**Insulation:**Class F |

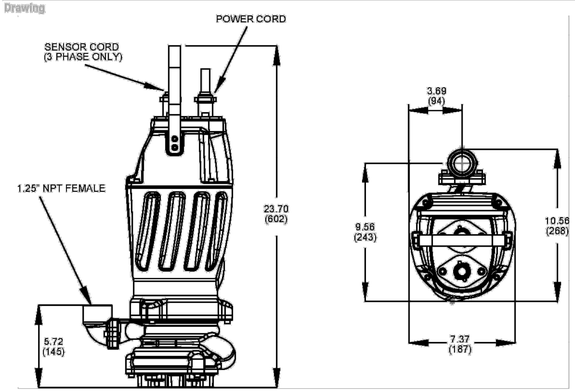
**SINGLE PHASE:** Capacitor start/capacitor run

**THREE PHASE:** Tri-Voltage 208-240/480, requires overload protection to be included in control panel.



BARNES

## Drawing

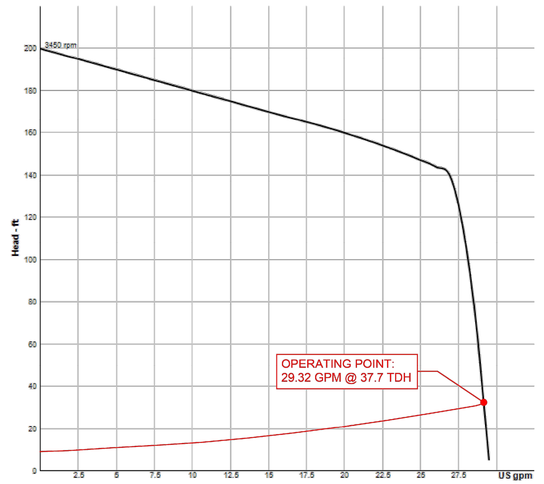



All dimensions are in inches (mm)



BARNES

## Curve






BARNES

## Model Information

| MODEL NUMBER | ZOGP2072L | ZOGP2092L | ZOGP2042L |
|---|---|---|---|
| PART NUMBER | 145027 | 145472 | 145473 |
| HP | 2 | 2 | 2 |
| VOLTAGE | 208-240 | 208-240 | 480 |
| PHASE/HZ | 1/60 | 3/60 | 3/60 |
| RPM (NOMINAL) | 3450 | 3450 | 3450 |
| NEMA START CODE | H | H | H |
| FULL LOAD AMPS | 17.5-15.0 | 8.5-8.2 | 4.6 |
| LOCKED ROTOR AMPS | 53.8 | 43.9 | 22.0 |
| CORD SIZE | 12/3 | 12/4 | 12/4 |
| CORD TYPE | SOW | SOW | SOW |
| CORD O.D. ± 0.02 -0.5IN (MM) | 0.81(15.5) | 0.67(17.0) | 0.67(17.0) |

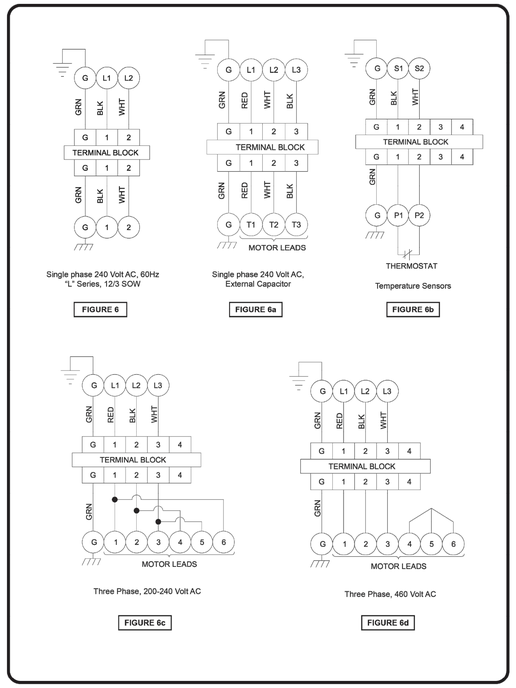
**IMPORTANT**

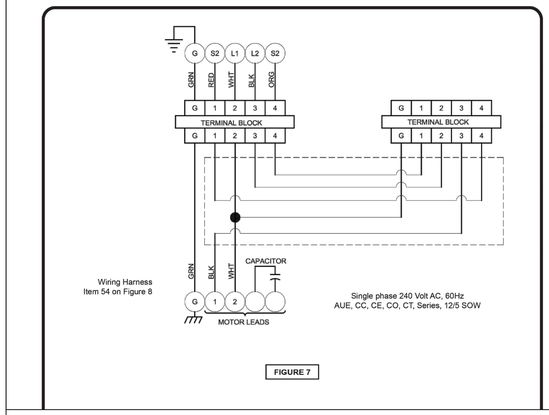
1.) PUMP MAY BE OPERATED "DRY" FOR EXTENDED PERIODS WITHOUT DAMAGE TO MOTOR AND/OR SEALS.
2.) INSTALLATIONS SUCH AS DECORATIVE FOUNTAINS OR WATER FEATURES PROVIDED FOR VISUAL ENJOYMENT MUST BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE ANSI/NFPA 70 AND/OR THE AUTHORITY HAVING JURISDICTION. THIS PUMP IS NOT INTENDED FOR USE IN SWIMMING POOLS, RECREATIONAL WATER PARKS, OR INSTALLATIONS IN WHICH HUMAN CONTACT WITH PUMPED MEDIA IS A COMMON OCCURRENCE.

**IMPORTANT**

FOR 3 PHASE MODELS: TEMPERATURE SENSOR CORD IS 14/3 SOW, 0.55 (14MM) ± .02 (.51MM) O.D.








NORTH CAROLINA PROFESSIONAL SEAL 052736 ENGINEER ASHLEY KABAT CUTRIGHT
06-09-2026

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DRAWN BY J. HILL
DESIGNED BY J. HILL
CHECKED BY A. CUTRIGHT
SCALE

# TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC

TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA

PRIVATE LIFT STATION DETAILS

JOB NO. 37630.232
SHEET NO. PS1.2

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## Wastewater Pump Station Calculations

**Project: Circle k Erwin**
**Project No: 37630.232**

**Prepared by: J. HILL**
**Prepared on: 01.22.2026**
**Date Revised: 06.03.2026**

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### Pump Station Capacity

| Description | Value | Units | Notes |
|---|---|---|---|
| Average Daily Flowrate | 1.65 | gpm | 3956 sqft @ 60 GAL / 100 SQFT |
| Peak Factor Used | 4.00 | | |
| Design Peak Influent Rate | 6.59 | gpm | |
| **Design Pumping Rate** | 29 | gpm | *Must be greater than Design Influent Rate* |
| | | | *Update based on pump / system curves* |

### Wet Well Sizing

| Description | Value | Units | Notes |
|---|---|---|---|
| Wetwell Diameter | 4.0 | feet | |
| Minimum Pump Cycle Time | 10 | min | |
| Unit Volume | 94.00 | gal/ft | |
| Wet Well Drawdown Volume | 72.50 | gal | *Based on* $V = \frac{TP}{4}$ |
| Average Pump Run Time | 5.15 | min | *Based on control settings below* |
| Average Pump Cycle Time | 90.69 | min | *Time between pump starts* |
| Peak Pump Run Time | 6.29 | min | |
| Peak Pump Cycle Time | 27.68 | min | |
| Average Wet Well Retention Time | 85.54 | min | *Time at Average Influent* |
| Peak Wet Well Retention Time | 21.38 | min | *Time at Peak Influent* |
| Minimum Operating Depth | 0.77 | ft | |

### Control Settings

| Description | Value | Units | Notes |
|---|---|---|---|
| 100-year Flood Plain Elevation | 188.00 | ft AMSL | |
| Top of Wet Well Elevation | 188.05 | ft AMSL | |
| Lowest Invert In Elevation | 183.18 | ft AMSL | (taken from smutil) |
| High Level Alarm Elevation | 182.05 | ft AMSL | **1.13' Below Influent Line** |
| Lag Pump On Elevation | 181.55 | ft AMSL | **0.50' Below High Level Alarm** |
| Lead Pump On Elevation | 181.05 | ft AMSL | **0.50' Below Lag Pump On** |
| Both Pumps Off Elevation | 179.55 | ft AMSL | **1.50' Below Lead Pump On** |
| Pump entrance diameter | 4.00 | inches | |
| Minimum Submergence | 0.51 | ft | H.I. Stds: S=(1+2.3$F$)D where $F$=v(gD)$^{-0.5}$ |
| Suction Entrance Elevation | 178.55 | ft AMSL | **1.00' Below Both Pump Off** |
| Wetwell Floor Elevation | 178.05 | ft AMSL | **6" Below Suction Entrance** |
| Depth of Wet Well | 10.00 | ft | |

### Pump Station Head Loss - Discharge Side

| Description | Value | Units | Notes |
|---|---|---|---|
| Pump Station Pipe Diameter | 1.25 | inch | From design plans |
| Pump Station Pipe Velocity | 7.58 | fps | |
| Pump Station Pipe "c" value | 120 | | (Hazen-Williams) |
| Equivalent Length of Fittings | 5.91 | ft | From Fitting Friction Loss Table Below |
| Straight Pipe Quantity | 15.00 | ft | From design plans |
| Total Equivalent Length | 20.91 | ft | |
| Pump Station Head Loss | 5.33 | ft | |



## Wastewater Pump Station Calculations

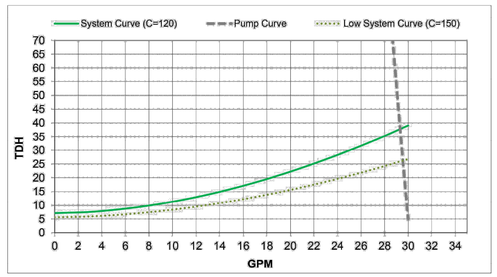
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Project No: 37630.232

Prepared by: J. HILL
Prepared on: 01.22.2026
Date Revised: 06.03.2026

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### Force Main Head Loss

| Description | Value | Units | Notes |
|---|---|---|---|
| Force Main "c" Value | 120 | | (Hazen Williams) |
| Force Main Nominal Diameter | 1.5 | in | |
| Force Main Material | HDPE - IPS DR11 | | |
| Force Main Inside Diameter | 1.534 | in | *From Pipe Properties Table* |
| Flowrate | 29 | gpm | |
| Velocity | 5.03 | fps | |
| Force Main Length | 248 | ft | Measured From Drawings |
| Equivalent Length of Fittings | 14.7 | ft | From Fitting Friction Loss Table Below |
| Total Equivalent Length | 262.7 | ft | |
| Force Main Friction Loss | 24.72 | ft | |
| Force Main High Point Elev. | 186.65 | ft AMSL | *Check FM / HGL plot for special design* |
| Manifold Condition? | No | | *considerations* |
| ~~Manifold Elevation~~ | ~~0.0~~ | ~~ft AMSL~~ | |
| ~~Peak Residual Pressure Head~~ | ~~0.0~~ | ~~ft~~ | ~~*At manifold connection*~~ |
| ~~Minimum Residual Pressure Head~~ | ~~0.0~~ | ~~ft~~ | ~~*At manifold connection*~~ |
| Pump Station LWL | 179.55 | ft AMSL | |
| System Static Head | 7.1 | ft | |
| Total Dynamic Head | 37.1 | ft | |






## Wastewater Pump Station Calculations

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Prepared on: 01.22.2026
Date Revised: 06.03.2026

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### Force Main Retention Time

| Description | Value | Units | Notes |
|---|---|---|---|
| Daily Flowrate | 2,374 | gpd | |
| Force Main Volume | 23.81 | gals | |
| Force Main Retention Time | 0.24 | hours | |
| Pump Cycles Req'd to Flush FM | 0.01 | cycles | |
| Pump Cycles per Day | 16 | cycles | Based on Average Daily Flow Rate |



## Pump Station Buoyancy Calculations

Project: Circle k Erwin
Project No: 37630.232

Prepared by: J. HILL
Prepared on: 01.22.2026
Date Revised: 06.03.2026

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### Wet Well Buoyancy

| Description | Value | Units | Notes |
|---|---|---|---|
| Inner Diameter | 4.0 | ft | |
| Outer Diameter | 4.1 | ft | **0.31-inch wall thickness** |
| Depth | 10.0 | ft | |
| Concrete Volume | 3.27 | ft$^3$ | |
| Wetwell Weight | 429 | lb | **Based on 145-lb/ft3 for concrete** |
| Displaced Volume | 129 | ft$^3$ | |
| Buoyancy Force | -8,045 | lb | **Based on 62.4-lb/ft3 for water** |
| Buoyant Weight of Wetwell | -7,616 | lbs | **Structure is buoyant without base** |

### Base Buoyancy Credit

| Description | Value | Units | Notes |
|---|---|---|---|
| Base Diameter | 5.1 | ft | **6 inches beyond WW outer diameter** |
| Base Thickness | 0.0 | in | *Base Thickness should be no greater than 12"* |
| Concrete / Displaced Volume | 0.00 | ft$^3$ | |
| Base Weight | 0 | lb | *Based on 145-lb/ft3 for concrete* |
| Buoyancy Force | 0 | lb | *Based on 62.4-lb/ft3 for water* |
| Buoyant Weight of Base | 0 | lb | |
| Buoyant Weight of Structure | -7,616 | lb | **Structure is buoyant without AF collar** |

### (Optional) Anti-Flotation Collar Credit

| Description | Value | Units | Notes |
|---|---|---|---|
| Collar Inner Diameter | 4.1 | ft | |
| Collar Thickness | 1.50 | ft | *If no collar used, set thickness to "0"* |
| Collar Height | 3.6 | ft | |
| Concrete / Displaced Volume | 94.18 | ft$^3$ | |
| Base Weight | 13,656 | lb | *Based on 145-lb/ft3 for concrete* |
| Buoyancy Force | -5,877 | lb | *Based on 62.4-lb/ft3 for water* |
| Buoyant Weight of Collar | 7,779 | lb | |
| Buoyant Weight of Structure | 163 | lb | Structure is not buoyant without soil |

*Note: The buoyancy calculations above reflect the worst case scenario during construction with the wet well empty, the excavation pit flooded and the absence of overbearing soil. Minimum concrete thicknesses were used for the wall and base sections to ensure a conservative approach. Actual wall and base thicknesses may increase per the manufacturer shop drawings which would reduce the size of the anti-flotation collar.*



## Pump Station Buoyancy Calculations

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Project No: 37630.232

Prepared by: J. HILL
Prepared on: 01.22.2026
Date Revised: 06.03.2026

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### Soil Impact

| Description | Value | Units | Notes |
|---|---|---|---|
| Angle of Influence | 15.0 | degrees | |
| Angle of Influence | 0.262 | radians | |
| Top of Triangle | 3 | ft | |
| Top Diameter | 10 | ft | |
| Bottom Diameter | 5 | ft | |
| Saturated Soil Density | 110.0 | lb/ft$^3$ | From Geotechnical Report or Estimate |
| Depth of Soil above Base | 10.0 | ft | |
| Volume of Soil | 359 | ft$^3$ | Volume of Soil (frustrum of cone, less wetwell) |
| Buoyant Weight of Soil | 17,103 | lb | |

### Buoyancy Float Check

| Description | Value | Units | Notes |
|---|---|---|---|
| Total Difference After Backfill | 17,266 | lb | *Structure is not buoyant after backfill* |



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| HARNETT REGIONAL WATER COMMENTS - 05.29.2026 | 06/03/2026 |

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CHECKED BY A. CUTRIGHT
SCALE

TIMMONS GROUP

CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC
NORTH CAROLINA LICENSE NO. C-1652
TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA
PRIVATE LIFT STATION DETAILS

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**SPECIFICATIONS:**
**SUBMERSIBLE GRINDER PUMP**
**BARNES RAZOR ZOGP 2HP**
**DOUPLE SEAL, OIL FILLED**

REVISION A

SECTION 43 26 13.XX

SUBMERSIBLE GRINDER PUMPS

PART 1 - GENERAL

1.01 SUMMARY

A. THIS SECTION ADDRESSES SUPERVISION, LABOR, MATERIALS AND EQUIPMENT IN THE WORK FOR FURNISHING AND INSTALLING SUBMERSIBLE GRINDER PUMPS

B. GENERAL CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND INCIDENTALS AS SHOWN, SPECIFIED, AND REQUIRED TO FURNISH, INSTALL, ADJUST, AND TEST SUBMERSIBLE GRINDER PUMPS AS SHOWN ON THE PLANS AND AS DESCRIBED IN THESE SPECIFICATIONS.

C. ALL SUBMERSIBLE SEWAGE PUMPS SHALL BE PROVIDED BY A SINGLE MANUFACTURER.

D. PUMP MANUFACTURER SCOPE OF SUPPLY:

1. SUBMERSIBLE GRINDER PUMP MOTORS
2. POWER CABLE FOR 1 PH AND 3 PH
3. SENSOR CABLE FOR 3 PH
4. BEARINGS
5. MECHANICAL SEALS
6. VOLUTE
7. IMPELLERS
8. PUMP SHAFT
9. AXIAL CUTTER
10. CUTTER PLATE
11. OTHER PUMP COMPONENT PARTS
12. SPARE PARTS
13. EXTRA MATERIALS AS SPECIFIED
14. TECHNICAL SERVICES
15. (ADD OR REMOVE AS NEEDED)

E. CONTRACTOR SCOPE OF SUPPLY: PROVIDE MATERIALS, EQUIPMENT, APPURTENANCES, AND SERVICES NOT SUPPLIED AS PART OF THE SYSTEM, INCLUDING BUT NOT LIMITED TO

1. UNLOADING, STORING, AND PROTECTING EQUIPMENT AT THE SITE IN ACCORDANCE WITH SUPPLIER'S RECOMMENDATIONS (ADD OR REMOVE AS NEEDED).

F. RELATED REQUIREMENTS (ADD OR REMOVE AS NEEDED):

1. SPECIAL PROVISIONS
   a. (ADD OR REMOVE AS NEEDED)
1. (ADD OR REMOVE AS NEEDED)
   a. (ADD OR REMOVE AS NEEDED)
2. MATERIALS AND EQUIPMENT
3. STARTING OF SYSTEM
4. PAINTING
5. SEQUENCE OF OPERATION
6. ELECTRICAL GENERAL REQUIREMENTS
7. BASIC ELECTRICAL MATERIALS AND METHODS
8. MOTOR CONTROL PANEL

1.02 PRICE AND PAYMENT (USE AS NEEDED)

1.03 REFERENCES

A. THE PUBLICATIONS LISTED BELOW FORM A PART OF THIS SPECIFICATION TO THE EXTENT REFERENCED. THE PUBLICATIONS ARE REFERRED TO IN THE TEXT BY BASIC DESIGNATION ONLY. THE REFERENCED PUBLICATIONS SHALL BE THE CURRENT EFFECTIVE EDITION.

1. HYDRAULIC INSTITUTE STANDARDS (HI)
2. AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM)
3. ASTM A48/A48M - 03 STANDARD SPECIFICATION FOR GRAY IRON CASTINGS
4. ASTM A470 STANDARD SPECIFICATION FOR VACUUM-TREATED CARBON AND ALLOY STEEL FORGINGS FOR TURBINE ROTORS AND SHAFTS
5. AMERICAN IRON AND STEEL INSTITUTE (AISI)
6. INSULATED CABLE ENGINEERS ASSOCIATION (ICEA)
7. AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)/AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
8. B16.1 GRAY IRON PIPE FLANGES AND FLANGED FITTINGS
9. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
10. INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)
11. NATIONAL ELECTRIC CODE (NEC)
12. AMERICAN BEARING MANUFACTURERS ASSOCIATION (ABMA)
13. AMERICAN SOCIETY FOR TESTING AND MATERIALS INTERNATIONAL (ASTM)

1.04 ALTERNATES - NOT USED

1.05 SUBMITTALS

A. GENERAL: IF REQUESTED THE MANUFACTURER WILL SUBMIT A MINIMUM QUANTITY OF ____ SETS OF STANDARD SUBMITTAL DATA IN ACCORDANCE WITH SECTION ( )

B. ACTION SUBMITTALS:

1. THE MANUFACTURER WILL SUPPLY THE STANDARD SUBMITTAL, CONSISTING OF:
   a. PUMP CATALOG DATA, INCLUDING A CERTIFIED PERFORMANCE CURVE AND PUMP DIMENSIONAL DRAWING
   b. MATERIALS OF CONSTRUCTION LIST
   c. MOUNTING ACCESSORY DETAILS
   d. MOVEABLE FITTING DATA
   e. TYPICAL INSTALLATION DRAWING
   f. ELECTRICAL SCHEMATICS AND DIAGRAMS, INCLUDING CONTROL PANEL DATA AND PANEL WIRING SCHEMATIC
   g. ACCESSORY DATA
   h. CERTIFIED COPIES OF TEST DATA FROM FACTORY TESTING WHEN SPECIFIED, ONLY AFTER PUMPS HAVE BEEN ORDERED AND MANUFACTURED.

C. INFORMATIONAL SUBMITTALS:

1. DESCRIPTIVE INFORMATION ON MATERIAL AND EQUIPMENT FURNISHED
2. ANCHORAGE REQUIREMENTS
3. INSTALLATION INSTRUCTIONS
4. MANUFACTURER'S CERTIFICATE OF ACCEPTANCE OF INSTALLATION AND TESTING
5. LIST OF MANUFACTURER'S RECOMMENDED SPARE PARTS
6. INSTALLATION & OPERATION MANUAL WITH PARTS LIST
7. WARRANTY DOCUMENTS
8. NAME AND ADDRESS OF FACTORY AUTHORIZED SERVICE FACILITY

D. CLOSEOUT SUBMITTALS:

1. COMPLY WITH SECTION ( ), OPERATION AND MAINTENANCE DATA.
2. PROJECT RECORD DOCUMENTS: RECORD ACTUAL LOCATIONS OF PUMPS AND APPURTENANCES ON THE CONTRACT DRAWING, REFLECTING ALL POST-BID CHANGES.
3. SECTION ( ), OPERATIONS AND MAINTENANCE DATA: SUBMIT MAINTENANCE INSTRUCTIONS FOR EQUIPMENT AND ACCESSORIES.

1.06 QUALITY ASSURANCE

A. WARRANTY

1. THE PUMPS SHALL COME WITH A 3-YEAR LIMITED WARRANTY, THAT BEGINS AT THE DATE OF SHIPMENT FROM THE MANUFACTURER'S FACILITY.
2. A 5-YEAR FULL COVERAGE WARRANTY IS AVAILABLE AS AN OPTION.
   a. INCLUDE WARRANTY COVERAGE FOR/AGAINST (INSERT TEXT AS NEEDED)

1.07 DELIVERY, STORAGE, AND HANDLING

A. COMPLY WITH PROVISIONS OF SECTION ( )

1. LIST THE SPECIAL STORAGE AND HANDLING REQUIREMENTS FOR THE PRODUCTS SPECIFIED, INCLUDING LOCATION AND ENVIRONMENTAL CONDITIONS TO PROTECT FROM DAMAGE.
2. STORE MATERIALS TO PERMIT EASY ACCESS FOR INSPECTION AND IDENTIFICATION. KEEP ALL MATERIAL OFF THE GROUND, USING PALLETS, PLATFORMS, OR OTHER SUPPORTS. PROTECT STEEL MEMBERS AND PACKAGED MATERIALS FROM CORROSION AND DETERIORATION.
3. ALL PARTS SHALL BE PROPERLY PROTECTED SO THAT NO DAMAGE OR DETERIORATION WILL OCCUR DURING A PROLONGED DELAY FROM THE TIME OF SHIPMENT UNTIL INSTALLATION IS COMPLETED AND THE UNIT AND EQUIPMENT ARE READY FOR OPERATION.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. MANUFACTURER QUALIFICATIONS

1. PUMP(S) SHALL BE MANUFACTURED BY A COMPANY REGULARLY ENGAGED IN THE MANUFACTURE AND ASSEMBLY OF SIMILAR UNITS FOR A MINIMUM OF (5) YEARS.
2. THE PUMPS SHALL BE BARNES RAZOR SUBMERSIBLE GRINDER PUMP MODEL ZOGP____.
3. CONTRACTOR WILL PROVIDE OWNER WITH LOCATION AND DESCRIPTION OF MANUFACTURER'S SERVICE CENTERS AND SPARE PARTS STOCK.
4. MANUFACTURER SHALL BE CERTIFIED TO ISO 9001 AND SHALL PROVIDE A VALID CERTIFICATE UPON REQUEST.

2.02 PRODUCT DETAILS

A. SERVICE CONDITIONS:

1. THE PUMPS SHALL BE SUBMERSIBLE END SUCTION CENTRIFUGAL GRINDER TYPE, INSTALLED IN WET PIT SUBMERSIBLE INSTALLATION. THE PUMP WILL BE SUITABLE FOR SUBMERGENCE UP TO A DEPTH OF 66 FT.
   a. THE PUMPS SHALL BE PROVIDED WITH A PERMANENTLY INSTALLED "C"-CHANNEL GUIDE RAIL SYSTEM, WITH A SLIDING MOVABLE FITTING THAT AUTOMATICALLY CONNECTS TO THE DISCHARGE PIPING WHEN LOWERED INTO PLACE. THE MOVEABLE FITTING SHALL BE EQUIPPED WITH A CHECK VALVE, INCLUDING INTEGRATED ANTI-SIPHON. (ADD OR REMOVE AS NEEDED).
   b. THE PUMPS SHALL BE INSTALLED ON A PUMP SUPPORT STAND THAT IS FABRICATED OF 300 SERIES STAINLESS STEEL WITH RUBBERIZED PADS ON THE FEET, FIXING THE PUMP AT THE REQUIRED DISTANCE TO PROVIDE ADEQUATE SUCTION CLEARANCE. THE PUMPS SHALL BE EQUIPPED WITH A 1.25-INCH NPT OR BSP DISCHARGE FITTING WHICH INCLUDES A CHECK VALVE AND INTEGRATED ANTI-SIPHON. (ADD OR REMOVE AS NEEDED).
2. A CENTRIFUGAL SUBMERSIBLE GRINDER PUMP DESIGNED TO REDUCE ALL MATERIAL FOUND IN NORMAL DOMESTIC AND LIGHT INDUSTRIAL SEWAGE, INCLUDING PLASTICS, RUBBER, SANITARY NAPKINS, AND DISPOSABLE DIAPERS INTO A FINELY GROUND SLURRY. THE RESULTANT SLURRY IS THEN PUMPED THROUGH SMALL DIAMETER PIPING INTO A GRAVITY INTERCEPTOR OR TREATMENT FACILITY. THE TEMPERATURE LIMITATION OF THE LIQUID BEING PUMPED IS 104°F/40°C CONTINUOUS, 160°F/40°C INTERMITTENT AND THE SUBMERSIBLE MOTOR SHALL BE CAPABLE OF RUNNING DRY FOR EXTENDED PERIODS.
3. EACH PUMP WILL BE CAPABLE OF THE FOLLOWING PERFORMANCE:

| | | |
|---|---|---|
| Primary Flow | 29 | US GPM |
| Primary Head | 37 | TDH - FEET |
| Minimum Hydraulic Efficiency | | % |
| Secondary Flow | | US GPM |
| Secondary Head | | TDH - FEET |
| Tertiary Flow | | US GPM |
| Tertiary Head at Shutoff | | TDH - FEET |
| Discharge Size | 1.25 | IN |
| Motor Speed | 3450 | RPM |
| Motor HP | 2.0 | HP |
| Frequency | 60 | Hz |
| Voltage and Phase | 3 ph - 208 | V and ph |
| Motor Service Factor | 1.0 | SF |

2.03 PUMP AND MOTOR MATERIALS

A. COMPONENT MATERIALS

| | |
|---|---|
| Volute | ASTM A48 Class 30 Cast Iron |
| Impeller | ASTM A48 Class 30 Cast Iron |
| Axial Cutter | ASTM A276 440C Stainless Steel, Heat Treated to a minimum Rockwell C55 |
| Cutter plate | ASTM A276 440C Stainless Steel, Heat Treated to a minimum Rockwell C55 |
| Motor Housing | ASTM A48 Class 30 Cast Iron |
| Seal Plates | ASTM A48 Class 30 Cast Iron |
| External Hardware | 300 Stainless Steel |
| Lifting Bail | 304 Stainless Steel |
| Shaft | 416 Stainless Steel |
| Tandem Mechanical Seals | Silicon carbide for the rotating face and silicon carbide for the stationary face |
| Coating | The pump (s) shall be powder coated with an epoxy primer and polyester top coat |
| Gaskets | Buna-N |
| O-Rings | Buna-N |
| Motor Rotor Bars | Die Cast Aluminum |
| Elastomeric plug holding plate | ASTM A48 Class 30 Cast Iron |
| Cable Entry Housing | ASTM A48 Class 30 Cast Iron |
| Nameplate | 304 Stainless Steel |

B. PUMP COMPONENTS

1. THE VOLUTE WILL BE ATSM A48 CLASS 30 CAST IRON. ALL EXPOSED HARDWARE SHALL BE 300 SERIES STAINLESS STEEL. THE VOLUTE SHALL BE A SINGLE PIECE NON-CONCENTRIC DESIGN, WITH SMOOTH PASSAGES. THE VOLUTE SHALL HAVE TWO STAGES CONNECTED BY A CUTWATER PASSAGE, POSITIONED 180 DEGREES FROM THE DISCHARGE FOR BALANCE. THE DISCHARGE CONNECTION SHALL BE STANDARD 1.25 INCH NPT IN THE VERTICAL POSITION USING A THREADED BOLT ON DISCHARGE FLANGE. A MOVEABLE FITTING WITH C-CHANNEL CONNECTION IS ALSO ACCEPTABLE. PROGRESSING CAVITY PUMP DESIGNS SHALL NOT BE ACCEPTABLE.
2. THE PUMP SHALL INCLUDE TWO IMPELLERS. THE IMPELLERS SHALL BE OF RECESSED VORTEX DESIGN. THE FIRST STAGE IMPELLER SHALL BE 5.13 INCHES IN DIAMETER. THE SECOND STAGE IMPELLER SHALL BE 4.88 INCHES IN DIAMETER. PUMPS WITH STANDARD CENTRIFUGAL SEMI-OPEN IMPELLER DESIGNS SHALL NOT BE ACCEPTABLE. THE IMPELLER SHALL BE OF 85-5-5-5 BRONZE CONSTRUCTION AND MACHINED SUCH THAT THE UPPER AND LOWER IMPELLER ARE LOCKED FOR POSITIVE ROTATION BY A SHAFT KEY. BOTH IMPELLERS ARE DYNAMICALLY BALANCED TO ISO G6.3.
3. THE GRINDER MECHANISM SHALL BE SPECIFICALLY DESIGNED FOR USE IN A GRINDER PUMP. THE MECHANISM SHALL CONSIST OF AN AXIAL CUTTER THAT IS LOCKED FOR ROTATION BY A SHAFT KEY. THE CUTTER IS FIXED AXIALLY BY A SOCKET HEAD CAP SCREW. THE CUTTER PLATE IS HELD IN PLACE BY A PRESS FIT. THE ENTIRE CUTTING MECHANISM SHALL BE RECESSED, PROTECTING THE MECHANISM. ALL GRINDING MECHANISM COMPONENTS, INCLUDING BOTH THE CUTTER PLATE AND RADIAL CUTTER SHALL BE CONSTRUCTED OF 440C STAINLESS STEEL HARDENED TO A MINIMUM ROCKWELL C55 AND SHALL BE FINISH GROUND FOR A FINE CUTTING EDGE. THE GRINDER SHALL BE PLACED IMMEDIATELY BELOW THE PUMPING ELEMENTS AND SHALL BE DIRECT-DRIVEN BY A SINGLE, ONE-PIECE, STAINLESS STEEL MOTOR SHAFT. THE GRINDING ASSEMBLY SHALL OPERATE WITHOUT OBJECTIONABLE NOISE OR VIBRATION OVER THE ENTIRE RANGE OF RECOMMENDED OPERATING PRESSURES. THE GRINDER SHALL BE CONSTRUCTED SO AS TO ELIMINATE CLOGGING AND JAMMING UNDER ALL NORMAL OPERATING CONDITIONS INCLUDING STARTING. IN ORDER TO DEMONSTRATE ADEQUATE FLOW VELOCITY AND GRINDING CAPABILITY, THE GRINDER PUMP SHALL BE CAPABLE OF PASSING A SERIES OF STRINGY TYPE SOLIDS (DIAPERS, RAGS, FEMININE PRODUCTS, ETC.) THROUGH THE PUMP WITHOUT ROPING OR WINDING THE MATERIAL IN OR IMMEDIATELY BELOW THE PUMP SUCTION.
4. THE PUMP AND MOTOR SHAFT WILL BE A SOLID, CONTINUOUS PIECE OF 416 STAINLESS STEEL. SHAFTS UTILIZING A COUPLING OR OTHER ATTACHMENT METHOD WILL NOT BE ACCEPTABLE. THE SHAFT WILL HAVE A MAXIMUM ALLOWABLE DEFLECTION OF 0.002 INCHES AT THE LOWER MECHANICAL SEAL DURING OPERATION.
5. THE MECHANICAL SEALS WILL BE A SINGLE MECHANICAL SEAL SYSTEM. THE MATERIALS OF CONSTRUCTION SHALL BE SILICON CARBIDE FOR BOTH THE ROTATING FACE AND FOR THE STATIONARY FACE, LAPPED AND POLISHED TO A TOLERANCE OF ONE LIGHT BAND, WITH 300 STAINLESS STEEL HARDWARE, WITH ALL ELASTOMER PARTS OF BUNA-N.
6. SEAL MUST OPERATE IN AN OIL FILLED CHAMBER WHICH SHALL PROVIDE SUPERIOR HEAT TRANSFER & SEAL COOLING. SEAL FACES SHALL BE LAPPED AND POLISHED TO A TOLERANCE OF ONE LIGHT BAND. THE SEALS MUST NOT REQUIRE ROUTINE MAINTENANCE OR ADJUSTMENT BUT SHOULD BE EASILY REPLACED. THE SEAL SHALL BE COMMERCIALLY AVAILABLE AND NOT A PUMP MANUFACTURER'S PROPRIETARY DESIGN.
7. THE COMMON PUMP AND MOTOR SHAFT SHALL ROTATE ON TWO BEARINGS. THESE BEARINGS SHALL BE HIGH QUALITY AND COMMERCIALLY AVAILABLE. THE BEARINGS SHALL OPERATE IN AN OIL BATH ENVIRONMENT FOR SUPERIOR LUBRICATION, COOLING AND LIFE. PERMANENTLY LUBRICATED BEARINGS ARE NOT ACCEPTABLE. THE PUMP SHALL BE A TWO-BEARING DESIGN CONSISTING OF AN UPPER BALL BEARING CARRYING THE THRUST LOADS, AND LOWER BALL BEARING FOR THE PURPOSE OF CARRYING THE THRUST LOADS AND RADIAL LOADS. SLEEVE BEARINGS WILL NOT BE CONSIDERED EQUAL. THE LOWER BEARING SHALL BE OF THE SINGLE ROW BALL TYPE, LOCKED IN POSITION TO ACCEPT RADIAL AND AXIAL THRUST LOADS AND THE UPPER BEARING SHALL BE OF THE SINGLE BALL TYPE FOR RADIAL LOADS AS NEEDED TO PROVIDE A MINIMUM L10 LIFE OF 50,000 HOURS AT -50% TO +50% OF BEP.
8. GASKETS EXCEPT FOR SEAL GLAND AND BEARING RETAINER SHALL BE OF THE ANGULAR GLAND COMPRESSION O-RING TYPE ELIMINATING CRITICAL SLIP FITS AND THE POSSIBILITY OF DAMAGE DURING SERVICE ASSOCIATED WITH SLIDING O-RING SEALING ARRANGEMENTS. MATING SURFACES WHERE WATERTIGHT SEALING IS REQUIRED SHALL BE MACHINED AND FITTED WITH O-RINGS.
9. THE EXTERIOR OF THE PUMP LIQUID END SHALL BE COATED PER ARTICLE 2.04 FINISHES BELOW.
10. THE PUMP SHALL BE EQUIPPED WITH A STAINLESS-STEEL NAMEPLATE, LOCATED IN AN EASILY ACCESSIBLE LOCATION. THE FOLLOWING DATA WILL BE INCLUDED ON THE NAMEPLATE:

1. MANUFACTURER'S NAME
2. PUMP PART NUMBER, MODEL NUMBER AND SERIAL NUMBER
3. MOTOR HORSEPOWER RATING
4. VOLTAGE, PHASE, AND FREQUENCY
5. MOTOR SPEED
6. MOTOR FULL LOAD AMPS
7. AMBIENT TEMPERATURE RATING
8. CODE LETTER
9. IMPELLER DIAMETER
10. MOTOR INSULATION CLASS
11. SPARE PARTS

1. ONE SPARE FULL DIAMETER IMPELLER FOR EACH PUMP MODEL
2. ONE SPARE CUTTER ASSEMBLY SET
3. ONE SPARE SET OF MECHANICAL SEALS
4. ALL GASKETS
5. ALL O-RINGS
6. SPARE SET OF STARTING COMPONENTS (FOR 1 PH ONLY)

C. MOTOR COMPONENTS

1. THE MAJOR DRIVER COMPONENTS WILL BE ASTM A48 CLASS 30 CAST IRON. THE MOTOR SHAFT SHALL BE OF 416 STAINLESS STEEL.
2. THE MOTOR SHALL BE A SQUIRREL CAGE INDUCTION TYPE AND SHALL BE DIELECTRIC OIL FILLED FOR OPTIMAL THERMAL MANAGEMENT AND MAXIMUM BEARING LIFE. THE PUMP SHALL BE CAPABLE OF OPERATING IN A TOTALLY, PARTIALLY, OR NON-SUBMERGED CONDITION FOR EXTENDED PERIODS OF TIME WITHOUT DAMAGE DUE TO HEAT BEING GENERATED. OIL USED MUST BE ABLE TO BE DISPOSED OF AS NONHAZARDOUS WASTE. AIR-FILLED MOTORS WITH GREASE LUBRICATED BEARINGS SHALL NOT BE ACCEPTABLE. THE MOTOR SHALL BE NEMA TYPE B. THE STATOR WINDINGS SHALL BE INSULATED WITH MOISTURE RESISTANT AND SPIKE RESISTANT CLASS F VARNISH AND MAGNET WIRE INSULATION, RATED FOR 155°C (311°F). THE MOTOR SHALL BE 208 VOLTS, 60 HZ, 3 PHASE, AND SHALL HAVE A VOLTAGE TOLERANCE OF +/- 10% FROM NOMINAL VOLTAGE. THE MOTOR SHALL BE DESIGNED TO RUN CONTINUOUSLY IN A 40° (104°F) AMBIENT ENVIRONMENT.
3. SINGLE PHASE MOTORS SHALL BE OF THE CAPACITOR START CAPACITOR RUN DESIGN. THE START AND RUN CAPACITORS SHALL BE INTEGRAL TO THE PUMP. THE CAPACITORS SHALL BE LOCATED ABOVE THE MOTOR, OUTSIDE THE OIL FILLED CHAMBER. A REMOVABLE MOTOR CAP SHALL ALLOW ACCESS TO SERVICE THE CAPACITORS WITHOUT DRAINING OIL FROM THE MOTOR HOUSING.
4. THE STATOR SHALL BE PRESS FIT INTO THE MOTOR HOUSING, FOR MECHANICAL STABILITY AND OPTIMAL HEAT TRANSFER. THE USE OF BOLTS OR PINS TO SECURE THE STATOR INTO THE HOUSING WILL NOT BE ACCEPTABLE.
5. THE MOTOR SHALL HAVE A MINIMUM 1.0 SERVICE FACTOR. THE MOTOR SHALL BE DESIGNED FOR USAGE IN SUBMERSIBLE APPLICATIONS ONLY. THE MOTOR HORSEPOWER SHALL BE NON-OVERLOADING OF THE NAMEPLATE RATING THROUGHOUT THE ENTIRE PUMP PERFORMANCE CURVE. THE MOTOR SHALL MEET THE PERFORMANCE REQUIREMENTS OF A NEMA L SPEED TORQUE CURVE.
6. THE ROTOR BARS SHALL BE DIE CAST ALUMINUM.
7. THE MOTOR WILL BE CAPABLE OF OPERATING CONTINUOUSLY AT A MAXIMUM SUBMERGENCE DEPTH OF 66 FT (20M).
8. THE MOTOR WILL BE CAPABLE OF 11.5 STARTS PER HOUR WITH A MINIMUM REST TIME OF 77 SECONDS BETWEEN STARTS WITHOUT OVERHEATING.
9. MOTOR SHALL BE CSA LISTED TO THE CSA HARMONIZED STANDARD.

D. SENSORS

1. MOTORS SHALL HAVE BUILT-IN THERMAL OVERLOAD PROTECTION.
1. FOR SINGLE PHASE PUMPS, AN AUTOMATICALLY RESETTING, HEAT SENSING THERMAL DEVICE THAT INTERRUPTS CURRENT FLOW IF EXCESSIVE TEMPERATURE AND/OR CURRENT IS DETECTED SHALL PROVIDE PROTECTION AGAINST EXCESSIVE TEMPERATURE.
2. FOR THREE PHASE PUMPS, PROTECTION AGAINST EXCESSIVE TEMPERATURE SHALL BE PROVIDED BY HEAT SENSOR THERMOSTAT ATTACHED TO THE STATOR WINDINGS AND CONNECTED IN SERIES WITH THE CONTACTOR COIL IN THE CONTROL PANEL.

E. POWER CORD

1. THE PUMPS SHALL BE EQUIPPED WITH _____ FT. OF TYPE SOW POWER CORD. THE POWER CORD AND MOTOR SHALL BE CONNECTED VIA QUICK DISCONNECT PIN TERMINALS LOCATED WITHIN THE MOTOR HOUSING. PIN RECEPTACLES SHALL BE CRIMPED AND MOLDED TO THE POWER CORD IN A PVC PLUG. THE PLUG SHALL BE SECURED WITH A STAINLESS STEEL COMPRESSION PLATE TO PREVENT WATER FROM ENTERING THE MOTOR HOUSING AND TO PROVIDE STRAIN RELIEF AT THE POINT OF CORD ENTRY. A POLYBUTYLENE TEREPHTHALATE TERMINAL BLOCK WITH BRASS PIN INSERTS SHALL CONNECT THE POWER CORD LEADS WITH MOTOR LEADS. THE GROUND PIN SHALL BE LONGER THAN THE OTHER PINS SUCH THAT THE GROUND CONNECTION IS THE FIRST CONNECTION MADE AND THE LAST CONNECTION BROKEN WHEN THE PLUG IS INSERTED AND REMOVED, RESPECTIVELY. A BUNA-N O-RING SHALL PROVIDE ISOLATION SEALING BETWEEN TERMINAL BLOCK AND THE MOTOR HOUSING. THE CORD ASSEMBLY SHALL BE GUARANTEED BY THE MANUFACTURER TO MEET UL APPROVAL FOR SUBMERSION.
2. THE PUMPS SHALL BE CAPABLE OF BEING EASILY REMOVED AND REPLACED WITHOUT THE REMOVAL OF THE PUMP POWER CORD FROM THE ELECTRICAL CONDUIT.

2.04 FINISHES

A. THE PUMP (S) SHALL BE POWDER COATED WITH AN EPOXY PRIMER AND POLYESTER TOPCOAT.

2.05 ACCESSORIES

(ADD OR REMOVE AS REQUIRED)

A. THE PUMP SHALL BE SUPPLIED WITH A "C" CHANNEL RAIL ASSEMBLY TO FACILITATE REMOVAL OF THE PUMP(S) FROM GROUND LEVEL. THE "C"-CHANNEL GUIDE RAIL ASSEMBLY IS MADE OF 300 SERIES STAINLESS STEEL. THE GUIDE RAIL MOUNTS TO THE UPPER AND LOWER HORIZONTAL BRACKETS ATTACHED TO THE BASIN WALL. THE WAIT ALSO RESTS ON THE BASIN FLOOR. THE STAINLESS STEEL GUIDE RAIL SUPPORTS THE PUMP THE REQUIRED DISTANCE FROM THE BASIN FLOOR. GUIDE BRACKETS ARE ATTACHED TO THE PUMP FROM POSITIONING OF THE UNIT ON THE GUIDE RAIL DURING INSTALLATION AND REMOVAL. THE STATIONARY FITTING OF THE HYDRAULICALLY SEALED DISCHARGE IS POWDER COATED MACHINED CAST IRON. THE STATIONARY FITTING HAS A FIBER REINFORCED NEOPRENE DIAPHRAGM CLAMPED BETWEEN THE STAINLESS STEEL RAIL AND THE STATIONARY PRESSURE VESSEL. THE MOVEABLE FITTING IS HELD AGAINST THE STATIONARY FITTING BY THE CONSTRUCTION OF THE STAINLESS STEEL RAIL, ALIGNING THE MOVEABLE FITTING TO THE FLEXIBLE DIAPHRAGM FOR PROPER SEALING OF THE TWO SURFACES.

B. THE PUMPS SHALL BE INSTALLED ON A PUMP SUPPORT STAND THAT IS FABRICATED OF 300 SERIES STAINLESS STEEL WITH RUBBERIZED PADS ON THE FEET, FIXING THE PUMP AT THE REQUIRED DISTANCE TO PROVIDE ADEQUATE SUCTION CLEARANCE. THE PUMPS SHALL BE EQUIPPED WITH A 1.25-INCH NPT OR BSP DISCHARGE FITTING WHICH INCLUDES A CHECK VALVE AND INTEGRATED ANTI-SIPHON.

PART 3 - EXECUTION

3.01 EXAMINATION (USE AS NEEDED)

3.02 PREPARATION (USE AS NEEDED)

3.03 INSTALLATION

A. INSTALL IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS (AND STATE/MUNICIPAL, AND OTHER GOVERNING STANDARDS).

1. THE PUMP SHALL BE CAPABLE OF OPERATING CONTINUOUSLY IN A VERTICAL SUBMERGED CONDITION.
2. CONTRACTOR SHALL COMPLETE ALL PIPING AND SUPPORTS, MAKE ALL ELECTRICAL POWER AND CONTROL CONNECTIONS, AND INSTALL ALL SAFETY DEVICES AND INSTRUMENTATION PRIOR TO EQUIPMENT START-UP.
3. ALL ANCHOR BOLTS, NUTS, WASHERS, AND SLEEVES SHALL BE TYPE 316 STAINLESS STEEL FURNISHED BY THE CONTRACTOR AND SHALL BE OF AMPLE SIZE AND STRENGTH FOR THE PURPOSE INTENDED.
4. SEE ALSO 2.05 ACCESSORIES ABOVE.

3.04 QUALITY CONTROL

A. GENERAL: COMPLY WITH REQUIREMENTS OF SECTION ( )

B. FACTORY TESTS:

1. THE PUMP MANUFACTURER SHALL PERFORM A PUMP PERFORMANCE TEST TO VERIFY HYDRAULIC PERFORMANCE AS STANDARD. THE PUMP SHALL BE COMPLETELY SUBMERGED AND RUN TO DETERMINE THAT THE UNIT MEETS THREE PRE-DETERMINED HYDRAULIC PERFORMANCE POINTS.
2. IF CERTIFIED TESTING IS REQUIRED, THE MANUFACTURER SHALL OFFER TO PERFORM TESTS IN ACCORDANCE WITH GRADES B, E, OR U OF HYDRAULIC INSTITUTE STANDARDS 11.6 AND 14.6.
3. A CHECK OF THE MOTOR VOLTAGE AND FREQUENCY SHALL BE MADE AS SHOWN ON THE NAME PLATE.
4. A MOTOR AND CABLE INSULATION TEST FOR MOISTURE CONTENT OR INSULATION DEFECTS, IN ACCORDANCE WITH CSA CRITERIA.
5. EACH MOTOR SHALL BE DIELECTRIC TESTED TO VERIFY THE MOTOR INSULATION INTEGRITY.
6. CONTACT THE MANUFACTURER FOR TESTS NOT LISTED HERE.

C. MANUFACTURER'S REPRESENTATIVE

1. PROVIDE MANUFACTURER'S REPRESENTATIVE IN ACCORDANCE WITH SECTION ( ). THE REPRESENTATIVE SHALL INSPECT THE EQUIPMENT, CARRY OUT THE EQUIPMENT START-UP PROCEDURES, AND PROVIDE TRAINING TO THE OPERATORS IN HOW TO EFFECTIVELY OPERATE AND MAINTAIN THE EQUIPMENT. THE MANUFACTURER'S REPRESENTATIVE MAY BE AN EMPLOYEE OF THE MANUFACTURER'S DISTRIBUTOR.
2. PRIOR TO OPERATIONAL TESTING, THE CONTRACTOR SHALL HAVE THE MANUFACTURER'S REPRESENTATIVE PERFORM THE FOLLOWING:
   a. MEGGER TEST THE STATOR AND POWER CABLES.
   b. CHECK PROPER ROTATION.
   c. CHECK POWER SUPPLY VOLTAGE.
   d. MEASURE MOTOR OPERATING LOAD AND NO-LOAD CURRENT.
   e. CHECK LEVEL CONTROL OPERATION AND SEQUENCE.
3. DURING FINAL ACCEPTANCE TESTING, THE MANUFACTURER'S SERVICE REPRESENTATIVE SHALL REVIEW RECOMMENDED OPERATION AND MAINTENANCE PROCEDURES WITH THE OWNER'S PERSONNEL.
4. THE MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT FOR A PERIOD OF NOT LESS THAN ONE (1) DAY TO COMPLETE THE FOLLOWING:
   a. INSPECT COMPLETED INSTALLATION
   b. OBSERVE EQUIPMENT TESTING
   c. OBSERVE EQUIPMENT START-UP
   d. INSTRUCT OPERATIONAL PERSONNEL ON EQUIPMENT OPERATION AND MAINTENANCE.

D. FIELD TESTS:

1. AFTER INSTALLATION, THE PUMPING SYSTEM SHALL BE FIELD TESTED USING POTABLE WATER FOR A MINIMUM OF 30 MINUTES AND CHECK FOR CORRECT DIRECTION OF ROTATION IN THE PRESENCE OF THE MANUFACTURER'S REPRESENTATIVE AND THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING WATER AND FOR CONVEYING THE WATER TO THE SITE AND PROVIDING REQUIRED METER AND BACK-FLOW PREVENTION CHECK VALVE ASSEMBLY. EACH PUMP SHALL BE CYCLED THROUGH THE SEQUENCE OF OPERATION "PUMP ON" AS THE LEVEL RISES IN THE WET WELL AND THEN "PUMP OFF" DURING DRAW DOWN. ONCE EACH PUMP HAS BEEN TESTED SEPARATELY, THE PUMPS WILL BE OPERATED IN PARALLEL.
2. EACH PUMP SHALL OPERATE OVER ITS INTENDED OPERATING RANGE WITHOUT UNDUE NOISE, VIBRATION, OR CAVITATION. THE CONTRACTOR SHALL MONITOR AND RECORD VIBRATION AT THREE SYMMETRICALLY LOCATED POINTS ON EACH PUMP AT MAXIMUM AND MINIMUM SPEED AND SUPPLY DATA TO THE OWNER.

E. INSPECTIONS

1. UPON COMPLETION OF THE INSTALLATION AND ON-SITE TESTING, AND BEFORE ACCEPTANCE BY THE OWNER, THE PUMP MANUFACTURER OR THE AUTHORIZED PUMP MANUFACTURER'S REPRESENTATIVE SHALL SUBMIT A WRITTEN STATEMENT THAT THE PUMP INSTALLATION HAS BEEN INSPECTED AND IS COMPLETED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

3.05 ADJUSTING

A. ADJUST PARTS FOR SMOOTH, UNIFORM OPERATION.

3.06 CLEANING

A. CLEAN AS RECOMMENDED BY MANUFACTURER. DO NOT USE MATERIALS OR METHODS WHICH MAY DAMAGE FINISH (SURFACE) OR SURROUNDING CONSTRUCTION.

END OF SECTION

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 052736 ASHLEY KABAT CUTRIGHT 06-09-2026

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| 06/03/2026 | HARNETT REGIONAL WATER COMMENTS- 05.29.2026 |

DATE 04/24/2026
DRAWN BY J. HILL
DESIGNED BY J. HILL
CHECKED BY A. CUTRIGHT
SCALE

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NORTH CAROLINA LICENSE NO. C-1652

CIRCLE K - NC 55 & E JACKSON BLVD - ERWIN, NC
TOWN OF ERWIN - HARNETT COUNTY - NORTH CAROLINA
PRIVATE LIFT STATION DETAILS

JOB NO. 37630.232
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